

WISDOM QUIZ

Matthew 7:12

"Therefore all things whatsoever ye would that men should do to you, do ye even so to them: for this is the law and the prophets."



How well do you understand the concept of genuine love?

True/False

1 The "Golden Rule," stated "do unto others as you would have them do unto you," is a Scriptural concept. ☐ ☒

(Read Proverbs 14:12 and Isaiah 55:8-9.)

- Without the governing phrase "... for this is the law and the prophets," the idea of doing to others what you want them to do to you is a formula for selfish gratification. The Golden Rule is valid only if we learn from Scripture what must be fulfilled in order for actions toward God and man to be "loving deeds."

A proper application of the Golden Rule will eliminate painful experiences among Christians. ☐ ☒

(See Hebrews 12:4-8 and II Timothy 4:2.)

2 The death of Christ brought the Mosaic Law to an end. ☐ ☒

(Read James 4:11-12 and II Timothy 3:16.)

- Romans 10:4 states, "For Christ is the end of the law for righteousness to every one that believeth." End, or τέλος (TEH-loss), also means "completed" or "fulfilled." Thus, Christ did not discard the Law but perfectly fulfilled it as He promised. (See Matthew 5:17.) Those who enter into Christ through salvation also retroactively fulfill the Law. Terminating the Law would end the instruction to love God with all our hearts and our

neighbors as ourselves, because all the Law and Prophets "hang" on these two commandments. (See Matthew 22:40.)

The Law is divided into three parts: moral, ceremonial, and judicial. ☒ ☐

(See James 2:10.)

3 Doing good according to the Law and the Prophets can be legalistic. ☐ ☒

(Read John 14:21.)

- Doing good according to the Law and the Prophets fulfills the spirit of genuine love and, thus, is not "legalistic" (an unscriptural term). Jesus warned about the leaven of the Pharisees—hypocrisy. (See Luke 12:1.) Hypocrisy is teaching one thing while doing the opposite.

Scripture condemns those who try to earn salvation by keeping the Law. ☒ ☐

(See Galatians 5:2-4.)

4 An unbeliever cannot fulfill the Golden Rule. ☐ ☒

(See Luke 6:27-43.)

- Doing good apart from the Law and Prophets can be accomplished by unbelievers. Their good works may give a false sense of righteousness but fail to achieve the genuine love of God's righteousness.

Total Correct _____

Make Me a Blessing

IRA B. WILSON

GEORGE S. SCHULER

Slowly

1. Out in the high-ways and by-ways of life, Man - y are
 2. Tell the glad sto - ry of Christ and His love, Tell of His
 3. Give as 'twas giv - en to you in your need, Love as the

wea - ry and sad; Car - ry the sunshine where darkness is rife,
 are wea - ry and sad; Oth - ers will trust Him if on - ly you prove
 pow'r to for - give; His pow'r to for - give;
 Mas - ter loved you; the Mas - ter loved you; Be to the help-less a help-er in - deed,

rit. CHORUS Men or Unison
 Mak - ing the sor - row-ing glad. Make me a bless - ing,
 True, ev - 'ry mo - ment you live. Un - to your mis - sion be true.

Women
 Make me a bless - ing, Out of my life may Je-
 Out of my life

rit. Unison Women
 sus shine; Make me a bless - ing, O Sav - ior,

Parts *ad lib.*
 I pray Make me a bless - ing to some - one to - day.
 I pray Thee, my Sav-ior,

WISDOM WORKSHEET ON MATTHEW 7:12



*“Therefore
all things whatsoever
ye would that men
should do to you,
do ye even so to them:
for this is the law
and the prophets.”*



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The husband in the above picture is obviously violating the “Golden Rule” according to the Law and the Prophets because one of the basic needs of his wife is intimate conversation.

If this husband were to cherish his wife according to Ephesians 5:33, he would, in turn, receive more honor from his wife, which is one of his basic needs.

Without the precise instruction of Scripture, the Golden Rule becomes simply a vehicle for humanistic thinking. It is significant that every religion in the world contains the Golden Rule as part of its teaching.

When the Law and the Prophets are applied to the Golden Rule, the true meaning of genuine love is understood. Such love gives with no expectations of receiving; therefore, it is not hurt when expectations are not met.

Linguistics

Languages,
Grammar, Vocabulary,
Communication



THEREFORE

Greek: οὖν (OON)

DEFINITION: Accordingly; for that reason; consequently; these things being so.
INSIGHT: It indicates that something follows another from necessity.

ALL THINGS

Greek: πᾶς (PAHS)

DEFINITION: The whole; every kind of; anything whatsoever; altogether; in everything; in all things and ways.

WHATSOEVER

Greek: ὅσα ἅν (HAW-sah AHN)

DEFINITION: Abundance and multitude; how many; as many as; how great (many, much). All things whatsoever, i.e., how extraordinary; so much the more.

DO

Greek: ποιέω (poy-EH-oh)

DEFINITION: To make, i.e., to bring about; to cause; to produce; to cause to be or to become; to execute; to exercise; to practice, i.e., to pursue a course of action; to be active; to work; to spend time or life.

LAW

Greek: νόμος (NAW-moss)

INSIGHT: From a word meaning “to parcel out, especially food or grazing to animals,” thus, giving the idea of prescriptive usage or principles of law. A metonymy referring to the books of the Old Testament Law.

Do Resource A.

PROPHETS

Greek: προφήτης (praw-FAY-tace)

DEFINITION: An inspired speaker.
INSIGHT: Used as a figure of speech to represent the writings of the Old Testament prophets.

Do Resource B.

History

Archaeology,
Geography, Prophecy,
Music, Art, Literature



How did a wrong use of the “Golden Rule” force a city to form its own fire department?



Horse-drawn fire engines were first used to beat competing fire companies to the fire.

In the 1800s fires were extinguished by volunteer groups. These fire companies began competing for glory. Eventually they cut one another's hoses, overturned engines, and damaged hydrants.

In 1851 a building caught fire in Cincinnati, Ohio. One company could easily have put out the flames, but eleven determined companies arrived at the scene. While they battled over who should put out the blaze, the building burned to the ground.

This tragedy led the citizens to establish a professional fire department which was more interested in fighting fires than fighting each other.

How did a famous businessman learn the true meaning of the “Golden Rule”?

J. C. Penney's meager beginning gave no hint of his future world-famous retail chain. His father was a preacher, but J. C. Penney learned only enough Bible to call his business the “Golden Rule” stores. Bitterness resulted when others did not do for him what he tried to do for them. Only when Mr. Penney became a Christian later in life did he discover the true meaning of doing good according to the Law and the Prophets.



J. C. Penney
1875–1971

Do Resource C.

Science

Chemistry, Biology,
Astronomy, Geology,
Physics, Mathematics



How do zoos compete in doing good according to the Law and Prophets?

God makes it clear that wild beasts are man's enemies. God even used ungodly nations to keep wild beasts under control. (See Deuteronomy 7:22.)

The Law requires the death of any animal which kills a man. (See Genesis 9:5.)

One of the educational goals of most modern zoos is to present the

humanistic propaganda of evolution. There is a growing tendency not just to try to preserve endangered species, but actually to prefer these animals over human beings.



Laws to protect eagles are more strict than laws to protect human babies.

How is the "Golden Rule" illustrated by symbiosis in the world of nature?

Symbiosis is a parasitic relationship. Each of the three types of symbiosis gives us significant insights about doing good according to the Law and the Prophets.



Ants and aphids illustrate symbiosis.

Do Resource D.

How do horizontal and vertical lines illustrate the Law and the Prophets?



Vertical and horizontal lines provide some important insights about our relationship with God and others.

The Leaning Tower of Pisa

Do Resource E.

Law

Government,
Economics, Logic



How does removing the Law from the "Golden Rule" make it inaccurate?

The world has attached the name "Golden Rule" to Matthew 7:12. They believe that "it is the finest or highest rule of life."

Yet, without the Law and the Prophets to define what is actually meant by doing good to others, the Golden Rule soon becomes a means for selfish interest.



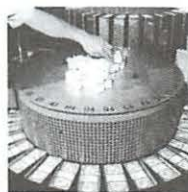
The rich young ruler was obeying the "Golden Rule," but he missed fulfilling the law of genuine love.

the law and the prophets" (Matthew 22:37-40).

At best the principle of the "Golden Rule" is the second highest rule; therefore, the name is inaccurate.

How is the economy of a nation destabilized when it violates the law of love?

Governments are to guard just weights and measurements, not to create paper money which has no backing. When a government creates unbacked money, it actually commits a form of robbery.



Making money not backed by gold violates the Golden Rule.

Do Resource F

Medicine

Health,
Nutrition, Behavior,
Counseling



How can giving a cup of cold water violate the "gold" of the "Golden Rule"?

Vast sums of money have been set aside to carry out good works. There are presently about 22,000 charitable foundations in the United States. Their assets total \$32 billion.

The Ford Foundation is the largest philanthropic organization in the world, totalling \$2.4 billion in assets. Since its inception in 1936, this foundation has given about \$4.8 billion.

Undoubtedly, many good works have been accomplished, but support has also been given for works which violate Scripture, such as programs which kill unborn children.

Jesus taught that a cup of cold water will bring reward only if it is given in His name. (See Mark 9:41.) Good works which are done in the names of foundations fail to fulfill the ultimate goal of giving glory to God.

How do spinal reflexes illustrate God's design for perfect love?

Doing good works can be compared to reflexes in the physical body. Automatic reflexes are stimulated by emergency needs. Conditioned reflexes are learned responses.

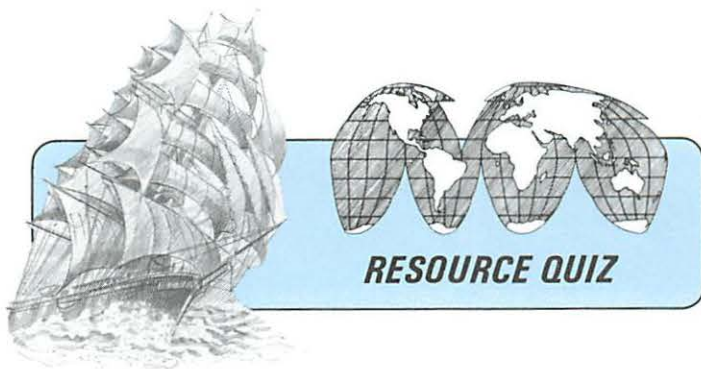


Examining the plantar reflex

Do Resource G.



Foundations such as the Carnegie Hero Fund were established to help individuals.



How many of these questions can you answer before studying the resources?

HOW DOES THE LAW GUARD GENUINE LOVE?



- How can a "harsh" law protect genuine love? . . . 2583
- What does the phrase "end of the Law" mean? . 2583
- Why is love destroyed if the Law is discarded? . . 2584
- What is the Christian's relationship to the Old Testament Law? 2585
- How does the Law give the Christian liberty? . . . 2586
- What is the law of love? . 2587

HOW DOES "DOING GOOD" EASE PAIN?



- How do the Law and the Prophets relate to the "Golden Rule"? 2589
- Where does God's Law require good works without expectations? 2590
- How does the Law warn against gifts that are given to obligate? 2591
- How does the Law alert us to the danger of doing good with presumption? . 2592

HOW DID J. C. PENNEY LEARN "AGAPE" LOVE?



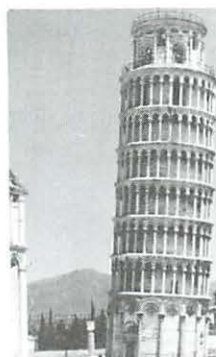
- What was J. C. Penney's seed of bitterness? 2595
- How did Mr. Penney's father teach him the "Golden Rule"? 2597
- How do values without love violate the "Golden Rule"? 2598
- How did J. C. Penney equate being a Christian with keeping the "Golden Rule"? 2600
- How did Mr. Penney first experience *agape* love? . 2609

HOW DOES SYMBIOSIS CLARIFY LOVE?



- What is symbiosis? 2611
- How does symbiosis relate to doing good? 2611
- What is "giving in order to receive" called? 2613
- What type of giving is *commensalism*? 2615
- What do parasites teach us about the "Golden Rule"? 2617
- How is symbiosis illustrated in Scripture? 2618

HOW DO LINES ILLUSTRATE THE LAW?



- What are the two pillars of the Law and the Prophets? 2619
- How do vertical lines demonstrate loving God? . 2619
- What do horizontal lines teach us about loving our neighbors? 2620
- What is the intersection of vertical and horizontal lines called? 2620

HOW IS ECONOMICS TIED TO LOVE?

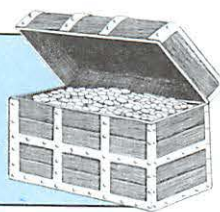


- What robs money of its value? 2625
- How does backing currency with silver or gold fulfill the law of love? . . 2626
- How is a nation's money supply increased? 2626
- How does fractional reserve lending violate the law of love? 2631
- What is moral currency? . 2632

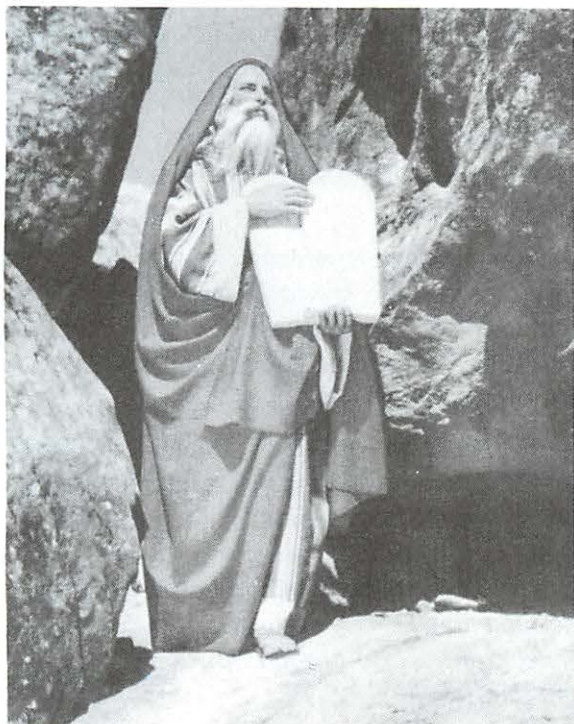
HOW DO REFLEXES ILLUSTRATE LOVE?



- Of what are the motor units in the body made? . 2633
- What is the patellar reflex? 2634
- What is difference between *effector* and *afferent* muscles? 2635
- To what does the accommodation reflex respond? . 2636
- What is the most important purpose for reflexes? . 2637



HOW DOES THE LAW GUARD THE TRUE MEANING AND APPLICATION OF THE "GOLDEN RULE"?



Bible Art Series, Standard Publishing, Cincinnati

How could the Law, which is perceived by most people as harsh and unloving, be the guiding force behind the "Golden Rule"?

One of the most important truths in Scripture is that we do not become Christians by keeping the Law. Neither are we under the condemnation of the Law once we enter into the righteousness of Christ. Our position in Christ's righteousness has been summarized by the declaration that we are "... *not under the law, but under grace*" (Romans 6:14).

Many Christians have inaccurately understood this phrase to mean that the Law has no more value or meaning to the believer. They reinforce this conclusion with Romans 10:4: "*For Christ is the end of the law for righteousness to every one that believeth.*"

Discover how such a determination destroys the possibility of genuine love among Christians.

What is the meaning of the Greek phrase "the end of the law"?

One Bible commentator begins a discussion of Romans 10:4 with the statement, "All interpreters of the Scripture are faced with the clear teaching that the death of Christ brought an end to the Mosaic law. . . ."

He finishes his article with the astonishing statement, "Thus, the evidence of the New Testament forces us to the conclusion that the law—all of it, including the Ten Commandments—has been done away."

Notice the Greek words of Romans 10:4:

| | | | |
|------------------------------|-----------------------|-------------------|-------------------------|
| τέλος γάρ For [the] end | νόμου of law | χριστός Christ | εἰς [is] for |
| δικαιοσύνην righteousness | παντὶ to every one | τῷ that | πιστεύοντι believes. |

To understand the true meaning of this verse, we must know how the word *end* is being used. Which of the following words would be the closest synonym of the word *end* in this verse?

- ☐ **Completed**
- ☐ **Finished**
- ☐ **Destroyed**
- ☐ **Terminated**
- ☐ **Concluded**
- ☐ **Expired**
- ☐ **Removed**
- ☐ **Fulfilled**

DEFINITION OF END

The Greek word for "end" is τέλος (TEH-loss), which comes from the primary root τέλλω (TEH-loe), meaning "to set out for a definite point or goal." By implication it means the conclusion or completion of an act. It is the fulfillment of a purpose.

According to *Thayer's Lexicon*, τέλος always refers to "the end of some act or state, but not [to] the end of a period of time." Those who believe that the Law is destroyed relate this word to the end of a period of time or dispensation.

Thayer's goes on to explain that the precise meaning of this word must be determined by the

context. Vine's *Expository Dictionary of the New Testament* further confirms this point. "Christ is described as 'the end of the Law unto righteousness to everyone that believeth.'

This concept is best explained in the context of Galatians 3:16–26. The promise of salvation is given to Abraham by faith, and the Law is a "schoolmaster" to bring us to salvation. "Wherefore the law was our schoolmaster to bring us unto Christ, that we might be justified by faith" (Galatians 3:24).

Notice that the initial goal of the Law is salvation, but the end of the Law is love. Paul emphasizes this truth when he states that the end of the commandment is charity. (See I Timothy 1:5.)

This point is further clarified in Romans 13:8–10: "Owe no man any thing, but to love one another: for he that loveth another hath fulfilled the law.

"For this, Thou shalt not commit adultery, Thou shalt not kill, Thou shalt not steal, Thou shalt not bear false witness, Thou shalt not covet; and if there be any other commandment, it is briefly comprehended in this saying, namely, Thou shalt love thy neighbour as thyself.

"Love worketh no ill to his neighbour: therefore love is the fulfilling of the law."

To throw out the Law is to throw out love.

Based on Romans 13

Because the very nature of God is love, the act of destroying the Law is even more serious. To throw out the Law of God is to discard God Himself. The reality of this unthinkable act is affirmed by I John 4:16: "And we have known and believed the love that God hath to us. God is love; and he that dwelleth in love dwelleth in God, and God in him."

When the Law is viewed from the perspective of genuine love, it is fulfilled, completed, and finished in Christ, but it is not destroyed, terminated, expired, removed, or concluded.

Notice the testimony of Christ Himself about this point: "If ye keep my commandments, ye shall abide in my love; even as I have kept my Father's commandments, and abide in his love" (John 15:10).

Those who understand the Law understand Christ.

Based on John 14:21

"He that hath my commandments, and keepeth them, he it is that loveth me: and he that loveth me shall be loved of my Father, and I will love him, and will manifest myself to him" (John 14:21).

Based on these truths, we see that the conclusion of some theologians misses the mark. In a book of New Testament word studies, the writer states, "To believers in Christ the law has no longer legislative authority to say, 'Do this and live; Do this or die.'"

If the author is referring to the eternal judgment of those who try to keep the Law for their salvation, he is correct, because he who keeps the whole Law while offending in only one point "is guilty of all." (See James 2:10.)

However, to relate such a statement to this life contradicts such passages as I Corinthians 11:29–30 in which we are commanded to obey God's Word or die: "For he that eateth and drinketh unworthily, eateth and drinketh damnation to himself, not discerning the Lord's body. For this cause many are weak and sickly among you, and many sleep [have died]."

How do the Law and the Prophets teach the believer genuine love?



When the work of the schoolmaster is done, what he taught is not thrown away.

1 **The Law is a schoolmaster to bring us to Christ and His love.**

“... By the fear of the Lord men depart from evil” (Proverbs 16:6). Where there is no fear of God, there is no conviction of sin, and where there is no conviction of sin, there is no motivation to come to Christ for salvation from the penalty of sin.

If we discard the Law, we eliminate the basis of conviction: “... For without the law sin was dead” (Romans 7:8) and “... sin is the transgression of the law” (1 John 3:4).

Paul emphasizes the fact that the Law defines sin in Romans 7:7: “What shall we say then? Is the law sin? God forbid. Nay, I had not known sin, but by the law: for I had not known lust, except the law had said, Thou shalt not covet.”

The power of the Law to bring conviction for sin and to motivate genuine repentance was demonstrated when Ezra read the Law to the people:

“So they read in the book in the law of God distinctly, and gave the sense, and caused them to understand the reading. . . . All the people wept, when they heard the words of the law” (Nehemiah 8:8–9).



Ezra reading the Law



Josiah hearing the Law

Another example of how the Law brings conviction is found in II Kings 22:11: “And it came to pass, when the king [Josiah] had heard the words of the book of the law, that he rent his clothes.”

2 **The Law is to be fulfilled in every Christian through love.**

When a person receives Christ as his Savior, he becomes a member of the spiritual Body of Christ. As such, he enters into the finished work of Christ's life, death, burial, and resurrection.

Accordingly, in Christ the believer fulfills all the demands of the Law for salvation.

As the perfect Son of God, Christ also became the perfect sacrifice to fulfill the demands of the Law for every sinner: “Christ hath redeemed us from the curse of the law, being made a curse for us . . .” (Galatians 3:13).

In a further sense the principles of the Law are to be fulfilled in every growing Christian as he is led by the Spirit of God: “There is therefore now no condemnation to them which are in Christ Jesus, who walk not after the flesh, but after the Spirit.

“For the law of the Spirit of life in Christ Jesus hath made me free from the law of sin and death.

“For what the law could not do, in that it was weak through the flesh, God sending his own Son in the likeness of sinful flesh, and for sin, condemned sin in the flesh:

“That the righteousness of the law might be fulfilled in us, who walk not after the flesh, but after the Spirit” (Romans 8:1–4).

There is yet an additional sense in which every Christian is to fulfill the Law, and that is to walk in love, which will be in accordance with the precise principles and precepts of the Law.

“For, brethren, ye have been called unto liberty; only use not liberty for an occasion to the flesh, but by love serve one another.

“For all the law is fulfilled in one word, even in this; Thou shalt love thy neighbour as thyself” (Galatians 5:13–14).

3 **The Law is a unified whole when seen through love.**

A threefold division of the Law is quite popular among theologians. However, those who received the Law did not make these distinctions, and the nature of the Law as seen through love rules out such an arbitrary structure. The three supposed divisions are the moral law, the ceremonial law, and the judicial law.

James points out the fallacy of such a division as he writes about the Golden Rule and its relationship to the Law: “If ye fulfil the royal law according to the scripture, Thou shalt love thy neighbour as thyself, ye do well: But if ye have respect to persons, ye commit sin, and are convinced of the law as transgressors. For whosoever shall keep the whole law, and yet offend in one point, he is guilty of all” (James 2:8–10).

A closer look at the Law in the light of New Testament teaching reveals the weakness of the idea of a threefold division. We would certainly not want to violate the moral law, which consists of commandments such as “Thou shalt not kill,” “Thou shalt not commit adultery,” and “Thou shalt not steal.”

The foundation of the ceremonial law is cleanliness. To ignore this law would be to court disease and death.

Christ fulfilled the sacrifice for atonement; yet, to throw out the principle of offerings would be to violate the New Testament teaching of giving. Even the Lord’s Table, which we are to remember regularly, has more significance to us when we understand the fulfillment of the sacrifices in the ceremonial law.

The judicial law is to be carried out by government officials, not by individuals. The shocking increase of crime and the overcrowding of prisons today can be traced to violations of the judicial law of God.

Those who want to divide the Law into three divisions point out that there are 613 individual laws, divided into 365 negative ones and 248 positive ones. Such a focus tends to emphasize the letter of the Law rather than the spirit of the Law. “. . . *The letter killeth, but the spirit giveth life*” (II Corinthians 3:6). Emphasizing the letter of the Law causes a person to miss the application of love which Jesus saw in the Law and the Prophets.

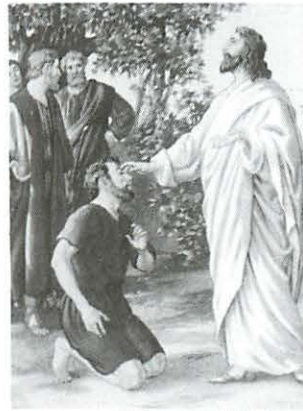
When Jesus was confronted by the Pharisees with a man who had a withered hand, they asked Him, “. . . *Is it lawful to heal on the sabbath days?* . . .” (Matthew 12:10). Their intention was to accuse Him of breaking the ceremonial law. They were clearly following the letter of the Law rather than the spirit of the Law.

It is significant that Jesus used the very law they were misinterpreting to prove that they were focusing on the letter of the Law and missing the spirit of the Law, which is genuine love.

He reasoned with them from Deuteronomy 22:4: “*And he said unto them, What man shall there be among you, that shall have one sheep, and if it fall into a pit on the sabbath day, will he not lay hold on it, and lift it out? How much then is a man better than a sheep? Wherefore it is lawful to do well on the sabbath days*” (Matthew 12:11).

Those who create a threefold division of the Law and then proceed to throw out the ceremonial

and judicial divisions are guilty of being partial to the Law. God warns about this attitude in Malachi 2:8–9: “*But ye are departed out of the way; ye have caused many to stumble at the law. . . . Therefore have I also made you contemptible and base before all the people, according as ye have not kept my ways, but have been partial in the law.*”



Jesus kept the law of love by healing on the Sabbath.

Those who focus on the letter of the Law and miss the purpose of love in every aspect of the Law wrongly motivate others to discard parts of the Law, thus dishonoring the entire Law.

In John 9, the account is given of Jesus healing a blind man on the Sabbath. Of course, Jesus was well aware of the Fourth Commandment when He healed the man. The Pharisees concluded, “. . . *This man is not of God, because he keepeth not the sabbath day* . . .” (John 9:16). However, Jesus taught us through this and other incidents that the only way to keep the Law is to see how it functions in carrying out the details of genuine love toward God and toward man.

4 The Law gives liberty to those who apply it in love.

In his epistle, James accurately relates the Law to genuine love. In so doing, he gives two significant names to God’s Law. In James 1:25, he identifies it as “the perfect law of liberty,” and in James 2:8, he calls it “the royal law.”

In the first passage he warns, “. . . *If any be a hearer of the word, and not a doer, he is like unto a man beholding his natural face in a glass. . . . But whoso looketh into the perfect law of liberty, and continueth therein, he being not a forgetful hearer, but a doer of the work, this man shall be blessed in his deed*” (James 1:23, 25).

In the second passage James establishes a direct relationship between the Law and the Golden Rule: “*If ye fulfil the royal law according to the scripture, Thou shalt love thy neighbour as thyself, ye do well*” (James 2:8).

In order that no one misunderstand that he is referring to the Mosaic Law, James goes on to say,

"For he that said, Do not commit adultery, said also, Do not kill. Now if thou commit no adultery, yet if thou kill, thou art become a transgressor of the law. So speak ye, and so do, as they that shall be judged by the law of liberty" (James 2:11-12).

The instruction of James 4:11-12 has direct application to anyone who would sit in judgment on God's Law: ". . . If thou judge the law, thou art not a doer of the law, but a judge. There is one lawgiver, who is able to save and to destroy: who art thou that judgest another?"

Perverting the Biblical concept of liberty leads to license. Those who claim that God's Law has no more meaning for the Christian and that we are free in Christ to break the Law without consequences are actually using God's grace as a license to gratify their lower natures.

Paul certainly speaks against this misuse in such passages as Romans 7:12-14: *"Wherefore the law is holy, and the commandment holy, and just, and good. Was then that which is good made death unto me? God forbid. But sin, that it might appear sin, working death in me by that which is good; that sin by the commandment might become exceeding sinful. For we know that the law is spiritual: but I am carnal, sold under sin."*

5 The law of love is written in the conscience of every person.

One of the reasons the Law of God is so convicting to all those who hear it is that it rings as truth within our own hearts. This confirmation of truth is explained in Romans 2:14-15: *"For when the Gentiles, which have not the law, do by nature the things contained in the law, these, having not the law, are a law unto themselves: Which shew the work of the law written in their hearts, their conscience also bearing witness, and their thoughts the mean while accusing or else excusing one another."*

Even when a person does the right thing but without love, those who are affected by the action may be offended and often react strongly. This response is affirmed by God's warnings that even if we do good and wonderful works but have not love, we *"... become as sounding brass, or a tinkling cymbal" (I Corinthians 13:1).*

The law of love requires that we be slow to lose patience, that we look for ways to be constructive, that we are not possessive, that we are

neither anxious to impress, nor do we cherish inflated ideas of our own importance.

Love has good manners; it does not pursue selfish advantage; it is not touchy; it does not keep account of evil or gloat over the wickedness of other people. Love rejoices when truth prevails; it knows no limit to its endurance, no end to its trust, and no fading of its hope.

"At his day thou shalt give him his hire, neither shall the sun go down upon it; for he is poor, and setteth his heart upon it: lest he cry against thee unto the Lord, and it be sin unto thee" (Deuteronomy 24:15).

God's law of love applies to those who are hired and extends even to the animals we use in farming. The ox that treads out the corn is not to be muzzled (see Deuteronomy 25:4), and beasts of burden are to be given a day of rest (see Exodus 20:10).



When Jesus revealed Himself from the Law and the Prophets to the disciples on the road to Emmaus, their hearts burned within them. There is a significant relationship between the Lord Jesus Christ and the Old Testament, and a person's conscience and genuine love. (See Luke 24:13-35.)

6 The law of love is God's timeless blueprint for true success.

In a study among business leaders, researchers discovered that 80 percent of job success was dependent not upon technical skills but on character qualities which brought about proper relationships on the job. These Godly and loving qualities and the success which they bring will be experienced by those who meditate on God's Law day and night.

In the following passages, notice the relationship between meditating on the law and realizing success. *“This book of the law shall not depart out of thy mouth; but thou shalt meditate therein day and night, that thou mayest observe to do according to all that is written therein: for then thou shalt make thy way prosperous, and then thou shalt have good success”* (Joshua 1:8).

“But his delight is in the law of the Lord; and in his law doth he meditate day and night. And he shall be like a tree planted by the rivers of water, that bringeth forth his fruit in his season; his leaf also shall not wither; and whatsoever he doeth shall prosper” (Psalm 1:2–3).

With promises like these it is little wonder that David praised the Law in such passages as Psalm 119:97–100: *“O how love I thy law! It is my meditation all the day. Thou through thy commandments hast made me wiser than mine enemies: for they are ever with me. I have more understanding than all my teachers: for thy testimonies are my meditation. I understand more than the ancients, because I keep thy precepts.”*

We would do well to pray as David did: *“Open thou mine eyes, that I may behold wondrous things out of thy law”* (Psalm 119:18).

Not only will an individual experience success by following God’s law of love, but the whole nation of Israel was assured that if they followed the commandments and statutes of the Law they would become the focus of the world’s admiration for wisdom and success in applying principles of love.

“Behold, I have taught you statutes and judgments. . . . Keep therefore and do them; for this is your wisdom and your understanding in the sight of the nations, which shall hear all these statutes, and say, Surely this great nation is a wise and understanding people. . . .”

“And what nation is there so great, that hath statutes and judgments so righteous as all this law, which I set before you this day?” (Deuteronomy 4:5–6, 8).

7 The Law explains the principles of sowing and reaping love.

“Be not deceived; God is not mocked: for whatsoever a man soweth, that shall he also reap. For he that soweth to his flesh shall of the flesh reap

corruption; but he that soweth to the Spirit shall of the Spirit reap life everlasting.” (Galatians 6:7–8).



Billie Art Series, Standard Publishing, Cincinnati

No matter how vigorously a person argues that the Law has no relationship to the life of the believer, every person must face the reality of the laws of sowing and reaping.

Most people agree with the warnings of Galatians 6:7–8; however, they do not realize that it is only in the Law that we learn what it means to sow to the flesh. Because our ways are not God’s ways (see Isaiah 55:8), whoever trusts in his own heart is a fool (see Proverbs 28:26).

The opposite of love is lust. Paul testifies that he would not have known lust except by the Law. (See Romans 7:7.)

Our concept of lust will be different from God’s; therefore, we need the enlightenment of God’s commandments. Jesus explained the spirit of God’s commandments concerning lust when he stated: *“Ye have heard that it was said by them of old time, Thou shalt not commit adultery: But I say unto you, That whosoever looketh on a woman to lust after her hath committed adultery with her already in his heart”* (Matthew 5:27–28).

PROJECT

Peter testified to the fact that all Scripture is inspired by God. He also assured his readers that they would do well to pay close attention to what he had written because he had *“a more sure word of prophecy.”* (See II Peter 1:17–21.)

His reference to *“a more sure word”* came from the fact that he had heard Moses (Law) and Elijah (Prophet) speaking with Christ on the Mount of Transfiguration. (See Matthew 17:1–13.)

Read the book of I Peter, and notice how heavily Peter based his teachings on the Law and the Prophets.

- Write down every reference Peter made to the Old Testament.
- Explain how each reference relates to genuine love.

Date completed _____ Evaluation _____



HOW DOES "DOING GOOD" ACCORDING TO THE LAW SOFTEN THE PAIN OF FUTURE HURTS?



Jesus experienced the truth that those whom we help the most will often turn against us in our time of need. For this reason we should never do good works according to the common perception of the "Golden Rule."

The wrong perception of the "Golden Rule"

The "Golden Rule" states, "Do unto others as you would have them do unto you." This statement, however, is not the complete instruction given by Christ in Matthew 7:12.

The phrase that is left out is as essential as the phrase Satan left out when he quoted Scripture to tempt Jesus in the wilderness. (Compare Matthew 4:6 and Psalm 91:11–12.)

The phrase omitted in the Golden Rule is "for this is the law and the prophets." This qualifier not only demands that our good works be done according to the standard of genuine love, but also gives clear direction on how to judge each work according to this standard.

Doing good according to the Law and the Prophets is doing good according to the standard of love.

Jesus confirmed that every part of the Law and the Prophets clarifies, amplifies, and illustrates genuine love.

"Jesus said unto him, *Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind. This is the first and great commandment. And the second is like unto it, Thou shalt love thy neighbour as thyself. On these two commandments hang all the law and the prophets*" (Matthew 22:37–40).

When we fail to do good unto others according to the Law and the Prophets, we fall short of true love and instead set in motion the destructive sequence of the following four attitudes:

1. **Expectations**
2. **Obligations**
3. **Presumption**
4. **Disillusionment**

1 Doing good according to the Law avoids harmful

EXPECTATIONS.

DEFINITION OF EXPECTATIONS:

The Hebrew word for "expectation" is תִּקְוָה (tick-VAW). It literally means "cord" and carries the sense of binding the one with expectations to the person of whom he has the expectations. The term is used to describe the steadfast faith which we should have toward the Lord. Thus, when our expectations are placed in others, we actually put those people in the place of God.

This result explains the need for God's instruction in Psalm 62:5: "My soul, wait thou only upon God; for my expectation is from him."

The Latin word for "expectations" combines *ex*, which means "out," and *spectare*, which means "to look." In English, the word *expectation* means "to look forward to the probable occurrence of; to consider likely or certain; to consider reasonable or due."

Expectations destroy relationships.

When we do good unto others and expect them to do good unto us, we set into motion conditions that damage friendships. Genuine love gives to the basic needs of others without thought of personal gain. Because the Law is God's description of genuine love, we are to carry out good works, "hoping for nothing" in return.

Where does God's Law require good works without expectations?

In Deuteronomy 15:7–11 God gives instruction to His people for the care of the poor. His people are to give generously without expectation of return: "... *Thou shalt surely give him, and thine heart shall not be grieved when thou givest unto him: because that for this thing the Lord thy God shall bless thee in all thy works, and in all that thou puttest thine hand unto.*

"For the poor shall never cease out of the land: therefore I command thee, saying, Thou shalt open thine hand wide unto thy brother, to thy poor, and to thy needy, in thy land" (Deuteronomy 15:10–11).

Having no expectations is difficult. We may give up the expectation of material rewards for our good works; however, we will continue to expect gratefulness. Even these expectations are bound to bring disillusionment, because people are basically ungrateful.

Jesus commented on human ungratefulness when He healed the ten lepers and only one returned to thank Him: "... *Were there not ten cleansed? but where are the nine? There are not found that returned to give glory to God, save this stranger"* (Luke 17:17–18).

If we want to be like our Heavenly Father in doing good works, we must give as God directs to the unthankful and the unrighteous, and He will reward us.

"And as ye would that men should do to you, do ye also to them likewise.

"For if ye love them which love you, what thank have ye? for sinners also love those that love them. And if ye do good to them which do good to you, what thank have ye? for sinners also do even the same.

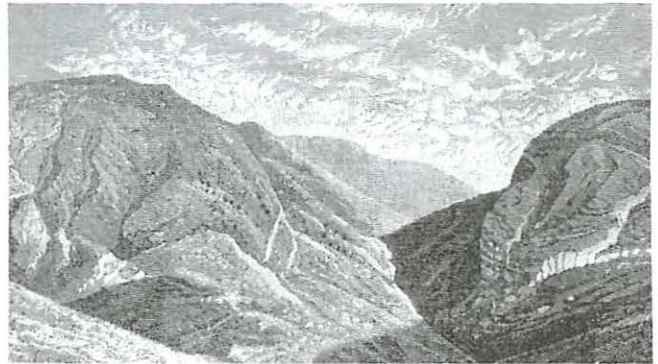
"And if ye lend to them of whom ye hope to receive, what thank have ye? for sinners also lend to sinners, to receive as much again.

"But love ye your enemies, and do good, and lend, hoping for nothing again;

and your reward shall be great, and ye shall be the children of the Highest: for he is kind unto the unthankful and to the evil" (Luke 6:31–35).

Where does God's Law illustrate the consequences of doing good with expectation for return?

Though hungry themselves, David and his soldiers did not take any of Nabal's sheep. Instead they spent long, cold nights guarding the sheep to keep them from being devoured by wild beasts.



Sheep paths in the Judean wilderness

David was a master shepherd, so when he fled from Saul's wrath, he turned his skills to doing good for Nabal. However, he expected Nabal to do good to him in return.

Notice the high level of expectation reflected in what David told his young men to say to Nabal:

"And thus shall ye say to him that liveth in prosperity, Peace be both to thee, and peace be to thine house, and peace be unto all that thou hast.

"And now I have heard that thou hast shearers: now thy shepherds which were with us, we hurt them not, neither was there aught missing unto them, all the while they were in Carmel.

"Ask thy young men, and they will shew thee. Wherefore let the young men find favour in thine eyes: for we come in a good day: give, I pray thee, whatsoever cometh to thine hand unto thy servants, and to thy son David" (I Samuel 25:6–8).

When David's expectations were shattered by Nabal's refusal to give him anything, David became angry and ordered the death of Nabal and all the men of his house. They were saved only through Abigail's appeal to David. (See I Samuel 25:10–31.)

2 *Doing good according to the Law eliminates entangling* **OBLIGATIONS.**

DEFINITION OF OBLIGATIONS:

Whereas expectations can bind the doer of good deeds, obligations bind the receiver of good deeds when those deeds are not done according to the Law and the Prophets.

The very word *obligate* is from the Latin word *obligare*. *Ob* means “toward” or “against,” and *ligare* means “to bind.” Thus, to obligate a person is to bind him toward yourself and against his best interests by doing him a service or a favor. An obligation is an implied indebtedness.

The Scriptural concept for such an obligation is a gift that would bind the receiver. Sometimes it is translated “gift,” and at other times it is referred to as a “bribe.”

How does the Law warn against gifts that are given to obligate?

The Law specifically warns about gifts that obligate: “*And thou shalt take no gift: for the gift blindeth the wise, and perverteth the words of the righteous*” (Exodus 23:8).

The entire legal system depends upon judges who render decisions which are free from partiality. Judges, therefore, are not to receive gifts. Thus, the Law states: “*Judges and officers shalt thou make thee in all thy gates, which the Lord thy God giveth thee, throughout thy tribes: and they shall judge the people with just judgment.*”

“*Thou shalt not wrest judgment; thou shalt not respect persons, neither take a gift: for a gift doth blind the eyes of the wise, and pervert the words of the righteous.*”

“*That which is altogether just shalt thou follow, that thou mayest live, and inherit the land which the Lord thy God giveth thee*” (Deuteronomy 16:18–20).

How does the Law illustrate the consequences of good works which obligate the receiver?

For a king to reign, he must have the loyalty of his people and sufficient resources and funds to carry out his programs.

With these two needs in mind, a trusted prince approached the king and brought to his attention a group of people who he claimed were disloyal to the king. The prince proposed a plan whereby he would remove this disloyal contingent and at the same time give a gift that would greatly increase the king’s treasury. The king was delighted with this plan and gave the prince the authority to carry it out.

The king was aware of the obligations which the plan would entail. First, he was obligated to carry out the plan even if he later changed his mind about it. Once the orders were sealed with his signet ring, they could not be countermanded. The king was also aware that the prince would be in line for new recognition after he carried out his “good deeds.” What the king did *not* know was that there would be great harm to himself and to thousands of innocent people because of the obligations the gift brought about. This is the account of wicked Haman and his “good works” to King Ahasuerus. (See Esther 3:8–15.)



The story of Haman and Mordecai is a powerful testimony of God’s openly rewarding good works which were done according to the Law and openly condemning good works that were done with the motivation of personal gain.

In contrast to Haman’s gifts of obligations, Mordecai carried out “good works” for the king without any motive of personal reward. At a time when the king was unpopular with the people, two of his own chamberlains conspired to kill him.

Mordecai, an exiled Jew who had reason to be bitter or greedy, uncovered the conspiracy and saved the king’s life but received nothing in return.

He was satisfied with the king's response to his deed and continued in loyal service to the king. It is obvious that he carried out his good works according to the mandate to hope for nothing in return.

The good works of Mordecai were based on the law which instructed the Jews to work for the welfare of the cities to which they were carried captive. God knew that the degree of peace each city enjoyed would determine the degree to which His people would be at peace.

"And seek the peace of the city whither I have caused you to be carried away captives, and pray unto the Lord for it: for in the peace thereof shall ye have peace" (Jeremiah 29:7).

3 Doing good according to the Law prevents prideful

PRESUMPTION.

DEFINITION OF PRESUMPTION:

A Hebrew word for "presumption," זִיד (ZEED), has in it the root word for *pride*. It denotes a person who has an exaggerated sense of self-importance and takes upon himself more authority than he has been given. This person makes willful decisions and asserts himself.

The word *presumption* comes from the Latin word *praesumere*. It is made up of *prae*, which means "before," and *sumere*, meaning "to take." It literally means "to take for granted, to take in advance, to assume rights before they are given."

The Greek term for "presumption" is *τολμητις* (tall-may-TACE). It refers to arrogance or pride and includes the idea of insolence with impunity.

A presumptuous person is one who believes he is entitled to things which do not belong to him. One who ventures ahead without specific permission, this person is one who goes beyond recognized limits.

How does the Law warn against doing good with presumption?

Harsh discipline is prescribed in the Law against those who act presumptuously in spiritual matters. The prophet who presumed to speak what God had not commanded him to speak was to be put to death. (See Deuteronomy 18:20.)

All of the laws regulating personal property are designed to avoid presumption and punish those who offend in this area. In Numbers 15:30 a different Hebrew word for "presumption" is used, and

the following warning is given against any who would act presumptuously: *"But the soul that doeth aught presumptuously [זִיד (YAWD)], whether he be born in the land, or a stranger, the same reproacheth the Lord; and that soul shall be cut off from among his people."*

God further describes the nature of presumption and its seriousness in Deuteronomy 17:12–13: *"And the man that will do presumptuously [זִיד (zaw-DONE)]—derived from זִיד, and will not hearken unto the priest that standeth to minister there before the Lord thy God, or unto the judge, even that man shall die: and thou shalt put away the evil from Israel. And all the people shall hear, and fear, and do no more presumptuously [זִיד]."*

Notice that the remedy for presumption is the fear of the Lord.

How does the Law illustrate the consequences of doing good based on presumption?

Everyone would agree that sacrificial giving to God would be a good work. Yet, Cain's gift was brought presumptuously, and as a result it was rejected by God. (See Genesis 4:3–5.)

Saul's sacrifice to the Lord was carried out presumptuously. Because of this, the kingdom was taken from Saul. (See I Samuel 13:8–14.)

Gathering wood for a fire is a good work. Yet, the Law required that it not be done on the Sabbath. The man who gathered sticks on the Sabbath was judged by God to be guilty of presumption and was stoned to death. (See Numbers 15:32–36.)



David attempted to do good unto the Lord and the nation by bringing the Ark of the Covenant up to Jerusalem. However, he presumptuously followed the example of the Philistines rather than God's Law when he transported it on a cart rather than on the shoulders of four Levites. Uzzah added to the presumption by trying to steady the Ark when the cart was shaken. Their "good works" resulted in Uzzah's death and brought shame to David. (See II Samuel 6:1–11.)

4 **Doing good according to the Law removes disabling**

DISILLUSIONMENT.

DEFINITION OF DISILLUSIONMENT:

An *illusion* is an erroneous perception of reality. Illusions produce false ideas or conclusions.

The prefix *dis* in Latin means “apart” or “asunder.” Thus, *disillusionment* means “to shatter one’s illusions; to burst the bubble of false perceptions.”

When expectations are imagined as a result of doing good works, illusions begin to occur. We imagine that others will give us those things we think are necessary for fulfillment, whether material or emotional, when actually fulfillment can come only from God. Thus, when people disappoint us, we often become disillusioned.

Unfortunately, when we do not trace disillusionment to our own wrong expectations, we are tempted to assign it to God by falsely concluding that He is unloving or unfaithful in meeting our needs. Those who have expectations from the Lord alone can claim the promise based on the words of Isaiah the prophet: “. . . Behold, I lay in Sion a chief corner stone, elect, precious: and he that believeth on him shall not be confounded” (1 Peter 2:6).

Being confounded results from disillusionment. One who is confounded is disgraced, dishonored, or put to shame. A Biblical synonym for “disillusionment” is *disappointment*. “Without counsel purposes are disappointed . . .” (Proverbs 15:22).

The Hebrew term translated “disappointment” comes from a primary root word which means “to break up; to cause to cease; to dissolve; to make of none effect; to bring to naught; to frustrate.” Both disillusionments and disappointments are the result of thwarted or unfulfilled expectations.

How does God’s Law keep us from disillusionment?

The Law and the Prophets clearly show that expectations from anyone or anything other than God is the beginning of worshiping another god. We give “worth-ship” to that which we expect to meet our needs, and we bow down to serve that which we believe will bring us satisfaction. The Law treats false expectations as high treason because

these attitudes change worship of the true God to worship of a false god.

God dealt with false worship swiftly and severely when He established the nation of Israel. Notice the commands of Deuteronomy 13:6–11: “If thy brother, the son of thy mother, or thy son, or thy daughter, or the wife of thy bosom, or thy friend, which is as thine own soul, entice thee secretly, saying, Let us go and serve other gods, which thou hast not known, thou, nor thy fathers;

“Namely, of the gods of the people which are round about you, nigh unto thee, or far off from thee, from the one end of the earth even unto the other end of the earth;

“Thou shalt not consent unto him, nor hearken unto him; neither shall thine eye pity him, neither shalt thou spare, neither shalt thou conceal him:

“But thou shalt surely kill him; thine hand shall be first upon him to put him to death, and afterwards the hand of all the people.

“And thou shalt stone him with stones, that he die; because he hath sought to thrust thee away from the Lord thy God, which brought thee out of the land of Egypt, from the house of bondage.

“And all Israel shall hear, and fear, and shall do no more any such wickedness as this is among you.”

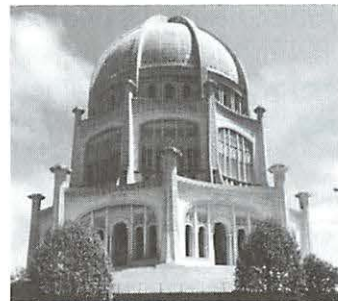
How is a misunderstanding of the Golden Rule being used by Satan to deceive millions of people?

There are many religions today which oppose Christianity either blatantly or subtly; yet, they claim to be founded on the Golden Rule. The Bahai religion grew out of the declaration that “all religions

honor the same God,” and that “the highest form of worship is service to other human beings” (World Book Encyclopedia).

When a former cult leader read the previous pages of this Resource, he exclaimed, “This material explains the error of our

thinking. Our whole cult was built around a misapplication of the Golden Rule. We were taught that



A Bahai temple

serving others was our highest calling in life, but we were never given the Scriptural parameters on Godly serving."

The results were tragic. Cult members were trained to sacrifice themselves for the happiness of others, and because there were no Scriptural restrictions, immorality was justified on the basis of the Golden Rule.

How does God's Law trace disillusionment to expectations?

David experienced the pain of disillusionment. His disillusionment came from the most unexpected people: "Yea, mine own familiar friend, in whom I trusted, which did eat of my bread, hath lifted up his heel against me" (Psalm 41:9).

Notice that David had done good unto this friend by providing meals for him which they had eaten together. It was natural for David to expect his friend and guest to be loyal to him when he needed him, but God turned David's expectations into disillusionment.

David's disillusionment is again mentioned in Psalm 55:12-14: "For it was not an enemy that reproached me; then I could have borne it: neither was it he that hated me that did magnify himself against me; then I would have hid myself from him: But it was thou, a man mine equal, my guide, and mine acquaintance. We took sweet counsel together, and walked unto the house of God in company."

The reason for David's disillusionment is further explained in Psalm 35:11-15: "False witnesses did rise up; they laid to my charge things that I knew not. They rewarded me evil for good to the spoiling of my soul.

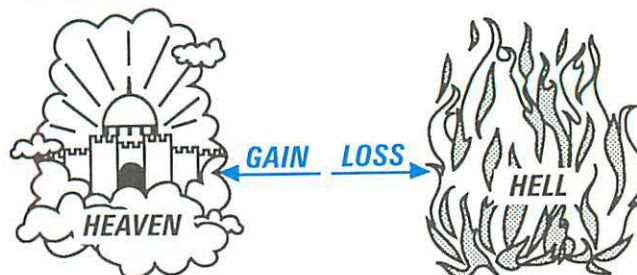
"But as for me, when they were sick, my clothing was sackcloth: I humbled my soul with fasting; and my prayer returned into mine own bosom.

"I behaved myself as though he had been my friend or brother: I bowed down heavily, as one that mourneth for his mother. But in mine adversity they rejoiced, and gathered themselves together: yea, the abjects gathered themselves together against me. . . ."

David became a type of Christ because of his experiences; we, too, are called to follow in Christ's steps. Thus, our good will be "evil spoken of," and we will suffer for our good deeds. However, if we do good according to the Law and the Prophets and do not expect anything from those to whom we do it, God will turn our suffering into redemptive works which will bring healing and life to many.

How do expectations relate to personal motivations?

God has planted two basic motivations within the heart of every individual. The first motivation is desire for gain, and the second is fear of loss. The ultimate desire for gain is Heaven, and the ultimate fear of loss is hell.



Each of these motivations can be fulfilled on three possible levels:

1. **Selfish level**—A selfish motivation grows from the desire for my own personal gain and a fear of my own personal loss.
2. **Phileo level**—On this level, a person desires the gain of others and fears the loss of others. This motivation is commended by the Lord, but there is a still higher level.
3. **Agape level**—The highest motivation is the desire for God's gain and the fear of God's loss. It is in the Law and the Prophets that we learn what brings gain or loss to God and His Kingdom. Understanding and committing myself to doing that which brings gain to God is the basis for carrying out the spirit of the Golden Rule.

PROJECT

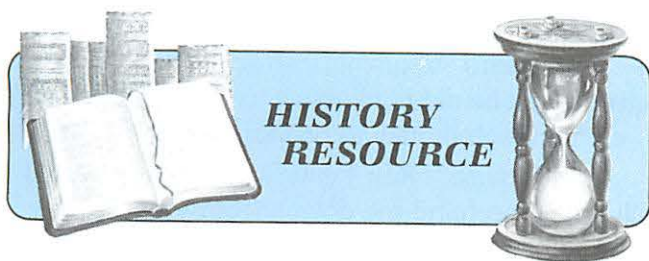
1. Recall an instance in which someone deeply hurt you or disappointed you. _____

2. Recall the good works that you did for this person. _____

3. What expectations did you have from this person in view of the good things you did for him or her? _____

4. How would your hurts have been decreased if you had not had any expectations? _____

Date completed _____ Evaluation _____



HOW DID A FAMOUS BUSINESSMAN DISCOVER THE TRUE MEANING OF THE "GOLDEN RULE"?



J. C. Penney. Golden Rule Boy, Wilma J. Hudson, ©1972 The Bobbs-Merrill Co., Inc.

Jim "Golden Rule" Penney, better known to most people as J. C. Penney, built his multimillion-dollar business on the idea of "do unto others as you would have them do unto you." Yet, it was not until later in his life when he came to Christ that he discovered the love which enables a person to apply the spiritual principle of Matthew 7:12.

The air inside the rustic little church building was filled with tension that warm Sunday afternoon in 1889. At the close of the afternoon preaching service the deacons had called a meeting of the congregation to decide an important matter. As the children were sent outside to play, the tight-lipped Missouri farmers and their wives sat stiffly in the pews, waiting for the meeting to begin.

Fourteen-year-old Jim Penney sat quietly with his mother and his father, who had pastored this

rural church for two decades. Faithfully making the twenty-five-mile trip on horseback or in a wagon, Rev. Penney had preached twice each Sunday and visited the sick and dying during the week. In all those years, he had never received a salary because this group thought it was unscriptural to have a paid minister. Rev. Penney disagreed with that doctrine, but he never complained. He worked hard at farming his own land in order to support his family and trusted the Lord to provide.

Another area in which the pastor and his people did not see eye-to-eye was Sunday school. Most of these folks believed children should learn the Bible only from their parents or with their parents in the preaching service. In contrast, Rev. Penney thought that Sunday school was an effective method of exposing youngsters to spiritual truths. Over the years he had tried to convince his congregation of this idea, but without success. In fact, some of the people disagreed so strongly that they began to speak of the pastor's view as heresy.

It was these folks who dominated this Sunday afternoon meeting. With little appreciation for his twenty years of faithful service and no understanding of his motives, they attacked him for his views on Sunday school. Rather than merely relieving him of his pastoral duties, they voted to excommunicate Rev. Penney and his wife!

Riding home in the wagon late that afternoon, Rev. Penney was silent for a long time. The only thing young Jim could think about was how unfair the people had been. Little did he realize that he was experiencing his first test on the true meaning of the "Golden Rule."

When his father finally spoke, it was clear that he passed the test. Although he was stunned and grieved by what had happened, he held no resentment toward those who had ousted him. He urged his family to forgive, but Jim could not. He was not a believer at that time, so it is perhaps not surprising that instead of forgiving he took up the offense and failed the test of the Scriptural Golden Rule.

The young man's bitterness became so deep that he refused to return to that church for over twenty years. Other long-lasting and life-changing consequences came as well. For years, unresolved bitterness blinded him to his need for the Savior and contributed to the various health problems he had. For most of his life his bitterness blocked the God-centered kind of love which would have enabled him to implement the Golden Rule as the true fulfillment of the Law and the Prophets.

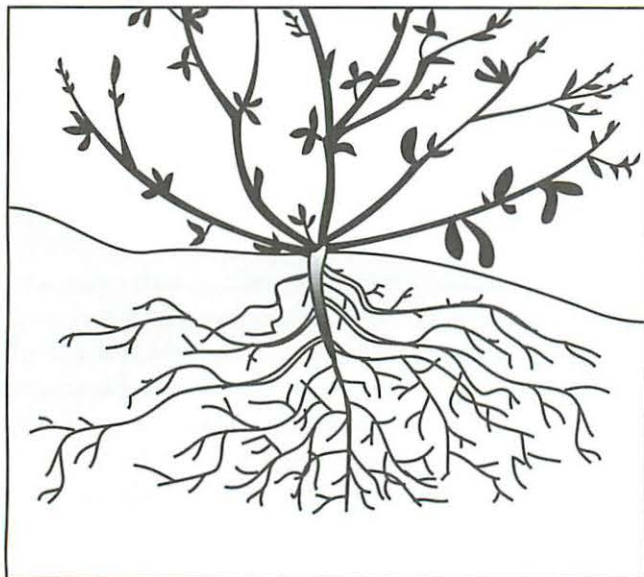
• ***The seeds of bitterness are planted in a wounded spirit.***

Jim's full name was James Cash Penney. After he became wealthy, many people accused him of contriving his middle name for publicity purposes, but it was actually his father's name as well.

The elder James Cash Penney had settled near Hamilton, Missouri, following the War Between the States. He and his Kentucky-born wife borrowed enough money to buy a 390-acre tract of bluegrass pastureland and build a house. Though twelve children were born to the Penney family, only six of them lived to adulthood.

When their seventh child was born in 1875, they named him after his father. Like most boys of that era, Jim learned early to work hard around the house and on the farm. When he was four, his father put another mortgage on the farm and bought a house in town so the children could attend the local public schools.

Along with faith in God, Rev. Penney sought to instill into his children the values of diligence, honesty, and fair dealing. Jim attended Sunday school and church regularly as he was growing up but did not accept Christ as his Savior.



Just as the roots of a plant are hidden from view, so the roots of bitterness in Jim Penney's life were silently growing, causing him to resist God's grace.

One day when Jim was eight, Rev. Penney came into the kitchen where the boy was studying his spelling words. "Jim, I just want you to understand," his father began, "that from now on you'll be buying your own clothes." Jim was speechless.

He had heard frequent instruction about self-reliance, but he did not know it would mean having to earn enough money to pay for his own clothing.

"Of course," Rev. Penney was saying, "you'll still get some hand-me-downs from your brother, but any new clothes and shoes you'll have to buy with money you earn yourself."



J. C. Penney Golden Rule Boy, Wilma J. Hudson, ©1972 The Bobbs-Merrill Co., Inc.

Rev. Penney told eight-year-old Jim that from then on he would be responsible for buying his own clothes and shoes.

Shoes! At that Jim quickly found his voice. "But, Pa," he said, "my shoes already have holes, both of 'em. Could you get me one more new pair, then let me start in?"

"No," he said firmly. "You'll have to figure out something." Jim knew better than to plead any more. He knew his father would not change his mind. He could not help thinking that if the church paid his father for preaching, the family would have more money and he would not have to pay for his own things.

Not only did Jim experience resentment at that time for having to assume this responsibility at a young age, but he could still remember many years later how the other children used to make fun of him because of his cheap clothes and ugly shoes.

Jim did not have any money saved to make such purchases. His father did not give any of the children an allowance or pay them for doing chores. Each was expected to do his share of the work as a part of his responsibility as a family member. Only when they grew big enough for work which Rev. Penney would have to pay a hired hand to do would he pay his own boys.

Because he was only eight, there were not many chores Jim could do around the farm. So he offered to run errands for the neighbors, hoping to earn an occasional nickel if someone sent him on a long errand. One day when he was feeling that he could never run enough errands to buy shoes, he was hired to do a real job. His older brother was supposed to help with the haying, but he had promised another farmer that he would work for him that day. Jim was allowed to work in his brother's place. After two hard days of work in the hayfield, his father paid him \$3.50!

Jim went shopping for shoes right away. He was pleased to find a pair for only one dollar. They were unsightly and poorly made, but he liked the price. He could have spent the rest of his money on a shirt and socks, but he decided to save it for a while instead.

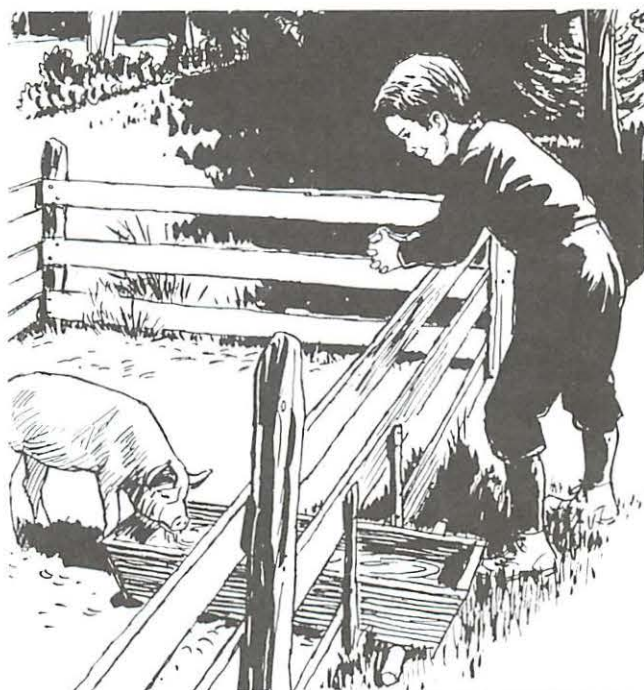


Jim thought his one-dollar shoes were so ugly that he decided to cut off the buckles and use only the laces. The other boys still made fun of them, which was all the more painful for Jim because he was also teased about being small for his age.

Realizing that having to buy shoes and clothes was not going to be just a one-time need, Jim wisely

began thinking ahead. He wanted to invest the \$2.50 he had left. He tried to think of a way to use it so he could earn even more money.

Finally, Jim decided to buy a pig to raise. He built a pen for it in the backyard. Then he went around to the neighbors and offered to clean their slop buckets if he could have their table scraps. They were glad to accept his offer.



Jim was eager for his little pig to grow. Every day he collected the neighbors' slop buckets and emptied them in the feed trough. Then he washed them out and returned them.

In a few months the pig grew fat, and Jim sold it for a nice profit. He had enough money to buy both the clothes he needed and two more shoats to raise. It was not long before he had a dozen pigs in his pen. Now he had to go to several houses to collect enough swill to feed them, but he was already looking forward to the big profit he would make when the pigs grew large enough to take to market.

Then one night Jim's father told him that he would have to sell the pigs right away.

"Why, Pa?" asked Jim. "They're not big enough yet."

"I know," replied Rev. Penney, "but several of our neighbors have complained about the noise and the smell."

"But, Pa, I thought you wanted me to earn money," Jim protested.

"I certainly do, but not in a way that takes advantage of others."

Jim knew the Golden Rule from years of attending church, but he had a hard time seeing how he was breaking it in this situation. His father patiently explained. This was one lesson he wanted Jim to learn well. Finally, the boy grudgingly admitted that he would probably complain about the stench and the noise himself, except for the fact that he was anticipating a profit.

The next day, still feeling a stinging sense of injustice, Jim sold his pigs for \$60, which was about half the amount he had been counting on. He was careful to save it all because he had no idea what he was going to do to earn more since he could no longer raise hogs.

When he was twelve, Jim came to his father after a revival service and announced that he wanted to join the church. Rev. Penney thought he was just making an emotional response. Therefore, instead of explaining the way of salvation to him and encouraging him to commit himself to Christ, Rev. Penney just asked, "Jim, are you sure you're old enough and wise enough to understand what you're doing?"

Jim had thought that he was ready, but this challenge made him pull back. Because of his father's reluctance, the boy soon lost interest in spiritual things.

• *Bitterness bears the fruit of a wrong concept of God.*

Tendrils of resentment were already growing in Jim's heart when the church action against his pastor father was taken. Of this period in his life J. C. Penney would later write, "I felt out of place in the world around me, ill at ease. At school, I was only an average student. At games I didn't hold my own very well, being undersized. I wasn't often invited with the others to parties. Schoolmates made fun of my clothes."

One summer evening as he sat with his father on the back porch, Jim voiced some of his bitterness by making a startling statement. "I don't believe there is any God," he said, expecting a rebuke or a debate. Rev. Penney did not argue. In fact, he did not say anything for a long time. Then with a gentle sadness and a note of anxiety in his voice, he said quietly, "Jim, prisons are full of men who don't believe there's any God."

That was all. The preacher did not share with his son a personal experience of God's presence and power or tell him about the love that sent Christ

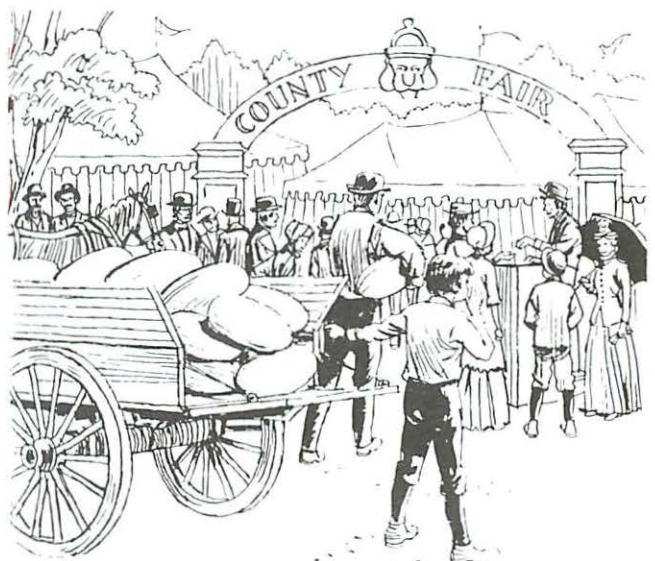
to the cross to die for those who did not believe in Him. Not wanting to end up in prison, Jim turned aside from atheism and seemed to adopt a deistic view of God. During these teenage years he superficially took on the values of his Christian parents without understanding the love upon which they were founded.

Jim's lack of personal convictions was demonstrated the year he graduated from high school. That spring Rev. Penney offered to let Jim use several acres of the farm to grow whatever crop he chose. He plowed up four acres and planted watermelons. The weather was favorable that spring, and summer brought a bumper crop.

Jim borrowed his father's horse and wagon to haul the watermelons to town and then began selling them door-to-door. It was a time-consuming process, however, and he decided it would be much more convenient for him if his customers came to *him* instead. Then he remembered that the county fair was going on, and he decided that would be just the place.

He drove the wagon to the fairgrounds on the edge of town and found a choice spot near the entrance. Everyone going in the main gate had to pass right by his wagon. He began hawking his wares and was pleased at how quickly he sold a half-dozen melons.

Just then he heard a familiar voice behind him. "Jim Penney, this is a disgrace to the family name," his father said sternly. "Pack up and head for home!" Jim did not understand why his father was



J. C. Penney, Golden rule Boy, Wilma J. Hudson, ©1972 The Bobbs-Merrill Co., Inc.

Because many families took picnic lunches to the fair, Jim had chosen what he thought was the perfect location for selling, but something was wrong.

upset, but he knew better than to question his instructions. Hurt and confused, he drove the wagon home immediately and waited for his father.

He did not have to wait long. The first thing Rev. Penney said was, "Son, don't you know what you were doing wrong?"

"No, sir, I don't," said Jim. "I was doing an honest business. Other people sell farm goods at the fair. I wasn't cheating anybody."

"Do you know what a 'concession' is?" Jim shook his head. His father went on, "That's what it is called when folks pay for the privilege of selling things inside the fair."

"But I wasn't selling inside the fair," Jim argued.

"That's just the point," said Rev. Penney. "What you were doing was unfair to those inside who had paid the fee."

Jim felt that his father was being too hard on him, but he swallowed his resentment and agreed to sell his watermelons elsewhere. Many years would pass before he would come to understand the principle of unselfish love, but in the meantime the necessity of practicing what he thought was the Golden Rule became ingrained in him.

For the first couple of years after he finished high school, Jim worked as a farmhand. He had thought about studying to become a lawyer, but his grades were not high enough for him to be accepted at a college even if he had the money. He did not mind farm work, but he longed to do something different.

Discerning that Jim had an aptitude for selling, Rev. Penney made arrangements for his son to serve an apprenticeship under Mr. J. M. Hale, a friend of his who owned a large store in Hamilton. At first Mr. Hale told Rev. Penney that he had six clerks already and he did not really need another one. Rev. Penney told him the pay was not that important as long as his son had the opportunity to learn the business.

Because Mr. Hale wanted to be of help, he agreed to pay Jim \$25 to work for the rest of the year. In spite of the low wages (\$2.27 per month!), the young man was delighted. He felt sure he could succeed at selling. So on the first Monday of February 1895, Jim began his first store job.

His first weeks in Mr. Hale's store were certainly no indication of how successful the young

man would ultimately be. The other clerks made fun of him and refused to show him how to make a sale. Whenever he would take the initiative to greet a customer and begin to wait on him, one of the others would interrupt and say something like, "Let me take care of this customer. You don't know the stock well enough yet."

Once again Jim felt resentment building up in his heart. It was true he was not familiar with all the merchandise, and he was afraid if he lost a sale he might be fired. Therefore, he gave in to the pressure and stopped trying to sell. Instead, he busied himself with taking care of the stock. He dusted and swept, sorted and stacked, and ran errands.



Jim kept his bitter feelings toward the other clerks to himself, not even telling his parents. He spent his days putting away the bolts of cloth which were left on the counter and generally cleaning up after the other clerks.

All the time he was doing these tasks, he paid close attention to everything on sale in the store. Soon he knew where to find almost any item. He memorized the prices and learned to distinguish between different weights and grades of fabrics so he could explain these characteristics to customers. Although he was pleased with the way the store looked and with the things he was learning, he was ashamed that he was not selling.

• ***Unresolved bitterness poisons personal relationships.***

One day Jim came to the realization that if he did not start selling, Mr. Hale would tell him at the end of the year that he was no longer needed. He determined that this would not happen. He would do what he knew he could do and not let his peers intimidate him. From then on, he refused to allow the other clerks to take a customer away from him. Within just a few months he ranked third in sales out of the seven clerks.

One day a young girl came into the store for a corset. Jim checked to see if they had her size in stock. The only ones left were in a dusty box which had obviously been on the shelf a long time. Eager to make a sale, Jim took one out and told the girl that it was the latest fashion.

At that point a saleswoman who was helping another customer across the aisle excused herself and stepped over to speak to the young girl. "Jim doesn't know the stock very well, but I'll be glad to help you in just a minute." Jim was irritated, but he found out later that what he had been trying to sell the girl was a nursing corset!

Although he was blind to the fact that it was his bitterness that had led him to lie rather than to show genuine love, Jim realized that he had failed to follow even his own understanding of the Golden Rule. He purposed that from then on he would always tell customers the truth about the merchandise.

Not long after Jim began working at Mr. Hale's, Rev. Penney, who had been ailing for several months, took a turn for the worse and died. During his last weeks he had spent a great deal of time thinking about how his older children had turned out. His oldest daughter had married, and her husband was a successful farmer. The firstborn son had also bought a farm nearby and was doing well. As Rev. Penney thought of Jim, he said, "Jim will make it. I like the way he's started out."

Jim's knowledge of his father's confidence in him kept the young man from giving up many times along the way, but bitterness made him incapable of fully appreciating the worth of his spiritual legacy until he became a Christian himself years later.

Jim felt resentful about his father's death for several reasons. He was only fifty-three years old, and Mrs. Penney was left with three younger children (ages four, nine, and twelve) to rear by herself. Two mortgages had to be paid, and Rev. Penney

had had no savings or insurance to help the family through this difficult time.

Jim also thought about how his father had always refused (up until the year before he died) to plow up any of the bluegrass pastureland on the farm. He preferred to raise cattle instead of planting crops. Some years they lost money on the farm, and they never made as much selling the cows as they could have made by growing corn. Consequently, the family's financial situation had always been rather precarious. Now his early death brought a definite crisis.

The bank advised Jim's mother to let it foreclose on the farm since it was now worth less than the amount owed, but she was determined to pay off the debt. Jim offered to quit his job at the store to work the farm, but his mother insisted that he stay and continue the training his father had wanted him to have. Her older son and son-in-law could take care of the farm.

At the end of the year, Jim fully expected Mr. Hale to tell him that he did not need him any longer. Instead, however, he commended him for his hard work and offered him an annual salary of \$200 if he wanted to stay on. Jim was delighted. He enjoyed working in the store so much that he was already thinking about going into business for himself someday.

• ***Bitterness bears the fruit of physical illness.***

Toward the end of that year, Jim's bitterness began to be evident in physical symptoms. He developed a bad cough. The doctor said he was on the verge of consumption, as tuberculosis was then called, and that it was imperative that he move to a drier climate and find a job working outdoors. Jim did not want to go because he felt responsible for his mother. Besides, Mr. Hale had promised to raise his salary to \$300 the next year.

However, Mrs. Penney insisted that he go West for the sake of his health. Jim had saved \$300 out of his earnings, and he decided he could leave that with his mother in case she needed it. So in 1897 the man the world would later come to know as J. C. Penney headed for Colorado.

As the train rolled across the miles of Kansas wheat fields, Jim thought about all he had learned from his father. He decided that he would build his business around what he then understood to be the Golden Rule. He equated this action with being a Christian. He would have to experience many

more bitter “clashes with life, before recognizing that what seemed to [him] to be sufficient was much less than what Christ taught.”



Denver near the turn of the century was Jim Penney's first experience of a big city. Eventually he would quit his job in two different stores before deciding to go to a smaller town.

As soon as he left the train in Denver, Jim went looking for a job. The doctor had said outdoor work was what he needed, but he had to have an immediate means of support, and the only thing he knew was dry goods. He walked from one store to another that day.

He quickly discovered that the letters of recommendation he had brought with him were not going to impress anyone. The first store owner he approached did not even read them, and others politely told him they did not need any clerks. Finally, at Joslin's Dry Goods Store he was offered a position which paid enough for him to meet his expenses.

Jim set about learning the stock at Joslin's and trying to satisfy every customer, but his diligence did not seem to get him very far. The other clerks, determined that the newcomer would not outdo them, often took customers away from him just as they had at Mr. Hale's store. An indication of how much his inner bitterness was coloring his relationships with others is that he threatened to thrash the senior clerk, who happened to be quite a bit bigger than he was.

The store manager often invited Jim to attend church with his family, and he went with them a number of times. For him, however, going to church was just a meaningless ritual because his mind was totally preoccupied with how to get ahead in his job.

Not realizing how to respond with genuine love, Jim found the situation at Joslin's so unpleasant that he quit as soon as he could find another store in which to work.

At the second store he encountered a different problem. He had been working there for only a few days when he discovered something that puzzled him. He was familiarizing himself with the stock and noticed that a certain kind of men's socks were marked with two different price codes: one meant the socks were a quarter a pair, and the other indicated the price as two pairs for a quarter.

Jim took them to the proprietor and asked if there had been a mistake. With a snide look the man informed the new clerk that the two codes simply meant he was to sell the socks for the higher price if he could but to use the lower price when necessary to make a sale.

“But, sir,” Jim said, “that's not fair to the customer who has to pay the higher price.”

“You sell the socks,” yelled the proprietor, “and don't tell me how to run my business!”

Jim went quietly back to checking the stock and found many other items marked with two prices. That evening he asked for his wages and left. He knew he could not work for a store that dealt with customers in such an unfair manner.

He was not sure what to do next. In looking for another job, he heard about a butcher shop for sale in the town of Longmont, about forty miles north of Denver. Having worked on farms, he knew a great deal about livestock. He could hire a meatcutter, and he could go around to the ranches and do the buying. That way he would be working outdoors as the doctor had ordered. The price of the shop was right, too—exactly \$300.

It seemed like a good situation, so he wrote his mother and asked her to send the money if she did not need it. The funds arrived promptly, and Jim went directly to Longmont to close the deal.

Everything went fine for the first couple of weeks. Then the meatcutter told Jim that the chef at the hotel was angry with him. Because the hotel was their largest customer, Jim was eager to find out why. The butcher explained that the previous owner had supplied the chef with a bottle of whiskey each week in exchange for the hotel's business.

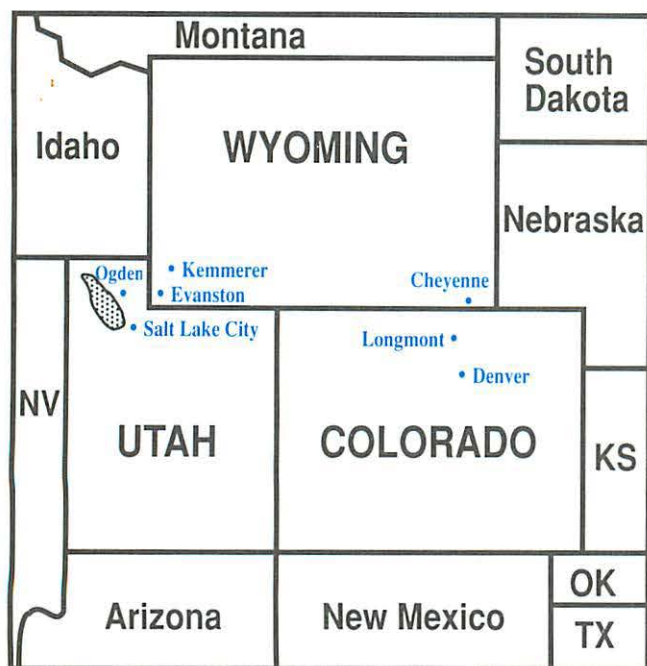
Because the chef had not received his liquor, he was threatening to take his business elsewhere. Without thinking much about it, Jim sent the chef several bottles, but his conscience would not let him continue. He knew what his father would have said

about such a deplorable practice. He had taught his sons to have nothing to do with alcohol, and giving a bribe would not pass even his own Golden Rule test any more than the two-price scheme at the dry goods store in Denver had done.

Jim went and talked to the chef, but having already compromised by conceding to the scheme at first, he found himself in an awkward position. The chef decided to take the hotel's business to another supplier. The butcher shop never had a profit after that incident. Unable to sell, Jim lost his entire investment. Perhaps if the young man had been operating his business (and his life) on the basis of genuine love instead of a guilty conscience, God would have turned things around for him by bringing in new customers.

Now flat broke and out of a job, Jim decided that dry goods was the field where he belonged. A store in Longmont run by Mr. T. M. Callahan reminded him of Mr. Hale's store. He went there and asked for a job.

Mr. Callahan was not interested at first. After Jim explained to him what had happened with the butcher shop, the storekeeper mentioned that one of his regular clerks was sick. He offered to let Jim fill in temporarily. The young man eagerly accepted, hoping he could prove himself and perhaps work into a permanent position.



This map of part of the Western United States shows the towns where J. C. Penney lived and worked during the years 1897-1913. It was in this area that the Golden Rule chain began.

After the busy holiday season was over, the clerk who had been absent returned to work. Mr. Callahan kept Jim on a while longer to do inventory. One day when that task was almost completed, Jim asked his employer if he should be looking for another job. Mr. Callahan looked at him thoughtfully and said, "Not if you'd be interested in working in my partner's store."

Jim was very interested, and as Mr. Callahan explained the partnership arrangement and the goal they had of starting a chain of stores, Jim became even more enthusiastic. Mr. Callahan had trained Mr. Johnson in his own store before setting him up in business in Evanston, Wyoming. Now the plan was for Mr. Johnson to train another man who would then become a third partner. Jim liked their plan.

So early in 1899 he said goodbye to Berta Hess, the young lady whom he had been courting, and set out for Evanston without even bothering to ask what his salary would be! After he started work and found out that he would be making \$50 a month, he wrote to Berta, telling her to set a date for their wedding. They were married in August in Cheyenne and made their first home in a tiny rented house in Evanston.

Meanwhile the store was prospering, and Mr. Johnson left young Mr. Penney in charge while he went East on a buying trip. One day the mayor came by and told Mr. Penney he wanted him to operate a store for him in a nearby town. He promised to pay him \$100 a month and make him a full partner. It was a tempting opportunity, but Mr. Penney thought it would be unfair to leave Mr. Johnson and Mr. Callahan at that time. He told the mayor he would have to talk it over with them.

When his employer returned, Mr. Penney told him about the offer. Mr. Johnson wanted to be fair, too, so he did not try to talk Mr. Penney out of accepting it. He knew the younger man was interested in the possibility of a partnership and his own store, but he could not yet offer him anything definite.

Finally, after trying to look at this decision from the perspective of the Golden Rule, Mr. Penney decided that the right thing to do was to stay in his current position. A few weeks later Mr. Johnson and Mr. Callahan came to him and said they were ready to open another store. They wanted him to manage it and would arrange for him to buy a one-third interest as a partner.

Mr. Penney was so excited he could hardly wait, but he was also worried because he had only

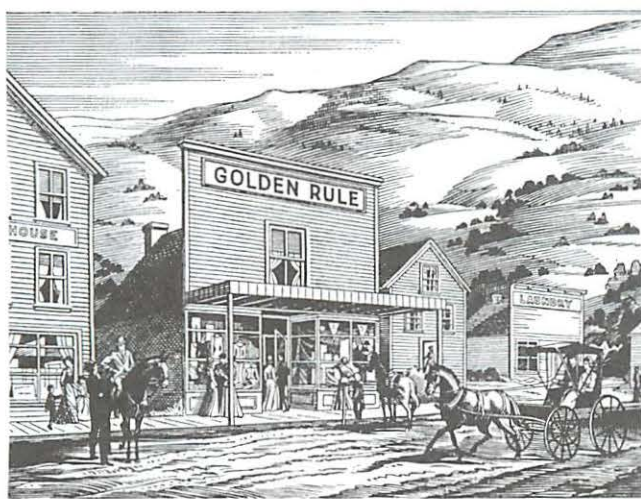
\$500 saved. He knew that to stock a new store would cost thousands of dollars, so he wrote to a bank in his hometown of Hamilton and was granted a loan of the additional \$1,500 he needed for his share.

There was also a disagreement about the new store's location. Mr. Johnson chose Ogden, Utah, but Mr. Penney thought this city of 35,000 people was too big. He preferred a small town where he could get to know the people and their needs. Mr. Callahan agreed, so they decided on Kemmerer, Wyoming.

Then Mr. Callahan talked to a friend whose sons had recently tried to establish a store in that town. They had failed miserably. This information caused Mr. Callahan to change his mind; now both partners were opposed to locating the store there. On the other hand, the more Mr. Penney found out about Kemmerer, the more he thought he could make a go of it. His enthusiasm won out, and the other men reluctantly agreed.

Kemmerer was a bleak little mining town in the barren hills of Wyoming. The miners were paid once a month in trading coupons which were good only at the company store. They did not have much money to spend at a cash-and-carry store, and neither did the ranchers who came to town for supplies. Yet, the young entrepreneur was eager for the opportunity to prove his partners wrong.

Mr. and Mrs. Penney both worked diligently to prepare for the opening day. They swept and scrubbed the building until it was spotless. They had no shelves or tables for displaying the merchandise, so Mr. Penney built makeshift ones from the wooden crates in which the stock arrived. On April 14, 1902, the first Golden Rule store opened its doors.



The Penney Idea. William M. Batten, The Newsweek Society in North America

Hardly anyone thought young Mr. Penney's store could succeed in Kemmerer, where the store run by the mining company had a virtual monopoly. Besides, the new store was not conveniently located.

As long as he lived, J. C. Penney would never forget that day—his first day in business. They had distributed hundreds of handbills listing their prices. Ranchers, miners, and town folk came to see this new kind of store. Even though it was not in a particularly good location for a business, the people came anyway. They liked the quality merchandise, and they appreciated the reasonable prices.

Finally at midnight, Mr. Penney decided they could close the store. His wife picked up the cash box, and he took the baby, who had been sleeping in a packing crate under the counter while they waited on customers. They wearily climbed the stairs to the attic above the store, where they were living.

They carefully counted all the cash they had taken in. Most of it was in quarters, dimes, and nickels. It came to \$466.59—a respectable beginning for the very first J. C. Penney store.



J. C. Penney, Golden Rule Boy. Wm. J. Hudson, ©1972 The Bobbs-Merrill Co., Inc.

Totaling the cash that night strengthened the young couple's feeling of optimism. Mr. Penney was already thinking he would like to own another store or two.

• Roots of bitterness choke out genuine love.

Soon the store became so busy that Mr. Penney needed some additional helpers besides his wife. He hired a couple of clerks, who soon discovered that he was a hard taskmaster. He was so demanding that thirty-nine clerks either quit or were fired in only one month's time!

Some who worked in his store in those days thought Mr. Penney was money-mad, but it was bitterness about his own experiences as a clerk that caused him to be a harsh manager. He applied his version of the Golden Rule to employee relations. His motto could have been stated, "Do unto your employees as you would have them do unto you—provided they work as hard as you do."



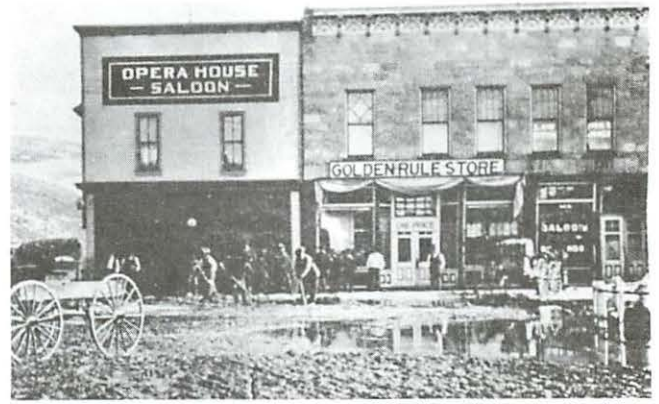
Man Street Merchant, © 1948 Norman Beasley, McGraw-Hill Co., Inc.

At this counter made out of a shipping crate, Mr. Penney made sale after sale during those busy first months in Kemmerer. In its first year of operation the Golden Rule store took in over \$28,000 in sales.

Before long Mr. Johnson and Mr. Callahan asked Mr. Penney to manage two other stores they had opened in nearby towns. He was making enough profit in the Kemmerer store to be able to purchase his one-third share in these stores without borrowing.

Now with three stores to stock and oversee, Mr. Penney was busier than ever. The stores opened at seven in the morning and stayed open until there were no more customers in sight. They were open on Sundays, too. Mr. Penney was so intent on making money that he had no time for church. He thought that leading a moral life and being honest in his business was all there was to being a Christian.

Though they often corresponded with one another, Mr. Penney rarely saw his partners. Thus, he was shocked when they came to town one day in 1907 and announced that they had decided to dissolve the partnership.



Man Street Merchant, © 1948 Norman Beasley, McGraw-Hill Co., Inc.

By this time the Kemmerer store had outgrown the small wooden building, and Mr. Penney moved it to this larger and more modern stone building.

At first, Mr. Penney was afraid he would have to sell out, but the partners offered him their two-thirds interest in the stores for \$30,000. For years he had dreamed of having *one* store of his own; here was a chance to own *three*! Mr. Johnson and Mr. Callahan were willing to loan him the money at 8 percent interest. They even agreed not to put a lien on the stock in the stores, accepting just his signature on the note as the guarantee that he would repay them. The deal was made.

Under his meticulous management, all three stores continued to prosper, and Mr. Penney often considered the possibility of expanding. At that time he thought half a dozen stores would be plenty. In order to open more stores, however, he felt he needed a partner. He was looking for a man he could train in the business the same way *he* had been trained.

He wanted a co-worker who was ambitious and willing to work hard for long hours at low pay. He would have to be a man who did not smoke or drink and who believed in God. The ideal trainee, in Mr. Penney's opinion, was one who shared his own commitment to integrity and who would treat everyone (employer, fellow workers, and customers) the way *he* would want to be treated.

Mr. Penney found such a man in Earl Sams, who came to work for him in Kemmerer and remained his business associate and close friend for fifty years. (In fact, Mr. Sams eventually became president of the J. C. Penney Company.) By 1910 there were fourteen Golden Rule stores. Mr. Penney, no longer personally managing a store, devoted his time to training new managers and overseeing company operations. He moved to Salt Lake City with his wife and their two boys.

• ***Bitterness bears the fruit of depression and loneliness.***

Toward the end of that year Mr. Penney and his wife were planning a trip to Europe and the Holy Land. A doctor advised Mrs. Penney to have her tonsils removed before embarking on the long sea voyage. She had the surgery done shortly before Christmas while Mr. Penney went out of town to wrap up some last-minute business.

Mrs. Penney developed a severe case of pneumonia, and an urgent message was sent to summon her husband home. He caught the next train to Salt Lake City. Tragically, Mrs. Penney died a few hours after he arrived. The thirty-five-year-old man was crushed. Now all the bitterness he had been holding inside began to surface.

For the next two years Mr. Penney lived in deep depression. The same resentment that made him incapable of showing genuine love to others now prevented him from receiving the love and grace God wanted to pour out on his grieving heart.

He later wrote that he did not pray during this shattering experience for the simple reason that he had never learned how to pray. He was taught self-reliance as a boy, and as a man he had come to rely more and more on his own powers, feeling no need of any external source of strength.

The Penneys had been attending a church since moving to Salt Lake City, and the pastor tried to help Mr. Penney during this time. His counsel, however, was that he should immerse himself in his work and find consolation in using his money for philanthropy. Mr. Penney's two sons, only eight and five years old, were sent to boarding school.



Main Street Merchant. © 1948 Norman Bradley, McGraw-Hill Co., Inc.

The interior of a Golden Rule store in the early 1900s looked like this. Merchandise was often hung from the ceiling in an effort to impress the customer with the variety of stock available.

At this time the business was expanding so rapidly that Mr. Penney found it easy to bury himself in a myriad of details and decisions. Yet, he still fought a lonely battle. Though he had never touched alcohol, he began to struggle with the urge to drown his bitterness in liquor. Night after night he walked the streets of the city tormented by temptation.

One winter night when he was in New York City on business, he left his hotel and wandered along the Bowery. As he trudged along in the dark, he heard the strains of a familiar hymn coming from one of the buildings.

**"Jesus, lover of my soul. . .
Hide me, O my Saviour, hide
Till the storm of life is past. . ."**

The despondent businessman was tired and cold, but he was also curious. He entered the rescue mission and took a seat at the back. A well-dressed man was standing up in the front, telling the story of how he had once been a slave to alcohol. He had lost his job, his family, and his self-respect. Someone from the rescue mission had picked him up out of the gutter one night and brought him into the service.



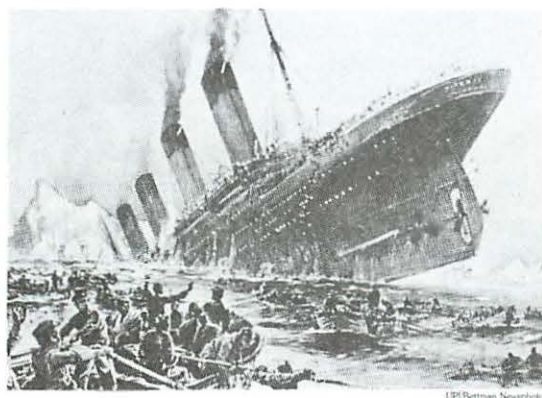
Jerry McAuley and His Mission, Arthur Bonner, Lazear Brothers

In a rescue mission on the Bowery in New York City, Mr. Penney saw men whose lives had been ruined by alcohol. He heard the testimony of one whose life had been restored by Christ.

"I found Jesus Christ in this place," the man said with joy on his face, and he went on to tell of his changed life. He now held a responsible position in a department store. This simple testimony made a deep impression on Mr. Penney. He realized that Christ was the answer to his life's problems, but he was not yet ready to relinquish his bitterness and come to the cross. Instead of making a commitment to Christ that night, he wrote a generous check, handed it to one of the staff, and slipped out.

During the following two years, twenty more Golden Rule stores were added to the chain. They now had locations in eight western states.

In 1912 Mr. Penney took his sons on a trip to Europe and the Holy Land. In the back of his mind was the idea that perhaps by seeing where Jesus lived he could somehow get closer to God. The problem, he admitted later, was that he was trying to come to Christ on his own terms rather than God's. The trip did help him to see that he had been trying to run away from his resentment. After a few weeks he purposed to come home and make a new beginning.



On the return trip, Mr. Penney and the boys were originally scheduled to sail from Liverpool to New York on the maiden voyage of the *Titanic*. Providentially, they changed their plans and were thus spared from the *Titanic*'s tragic accident.

After his return from Europe, the name of the Golden Rule stores was changed to the J. C. Penney Company. Mr. Sams had disliked the original name from the beginning because he thought that a firm which carried quality merchandise and treated customers fairly did not need to try to communicate that in its name. In fact, the name was used by so many dishonest merchants that he thought it tended to make the public suspicious rather than trusting.

As far as Mr. Penney was concerned, the name change did not signify any change in company policy. He was convinced that the continued success of his growing chain of stores depended on their faithfulness to the same principles to which he was committed in Kemmerer.

An example of how he was still applying these principles several years later is the case of a manager who was "too successful." This man, a Mr. Hughes, was sent to manage the Eureka, Utah, store as the final phase of his management training. He had a very good first year. In fact, the store reported the

highest profits in its history. Mr. Hughes expected a congratulatory letter from headquarters.

In examining his record, however, Mr. Penney perceived that the abnormally large profits were due to excessive markup. The letter to Mr. Hughes said, "This isn't the way we do things in the Penney Company. We owe to our community the service of merchandise at a fair profit. We can't ever allow ourselves to make too much profit."

Another example of how Mr. Penney's understanding of the Golden Rule guided him in business decisions took place in 1923. As new Penney stores appeared in small towns all across the country, many people in Hamilton wondered when Jim Penney would open one in his hometown. He waited until Mr. Hale was ready to sell out and retire. Then he bought the store where twenty-eight years earlier he had been given his first dry goods job.

Mr. Penney said, "I had wanted to come into Hamilton, but to come in the way I'd want another man to come if it were my store which was there first." So it was that Mr. Hale's old store became the five hundredth in the J. C. Penney chain.

As the company continued to expand, Mr. Penney tried to treat employees as well as customers according to the Golden Rule. When the problems inherent in the policy of every manager's being a partner began to threaten their success, Mr. Penney made sure that a new profit-sharing arrangement would benefit the managers as much as it did the company.

Under the new plan each manager's contract stipulated that his salary would be supplemented by a percentage of earnings from his own store. In one case, a young manager and his wife were just scraping by on a salary of \$135 a month. When he was transferred to a larger store, he hoped he might earn \$150 a month, but his paycheck stayed at the same amount. Although he was disappointed, he struggled through another year. Then an unexpected letter arrived from headquarters, containing a check for his share of the net profits of the store that year. The amount was over \$11,000!

The same principle guided Mr. Penney in decisions he made about potential mergers during the 1920s. The two Chicago mail-order firms of Montgomery Ward and Sears, Roebuck and Company both approached him at different times about the possibility of merging. Although Mr. Penney could have greatly increased his personal wealth by taking this step, careful investigation indicated that a merger would decrease the number of advancement

opportunities for Penney executives and managers. Therefore, in keeping with the spirit of the Golden Rule, he decided against the move.



Sears, Roebuck, U.S.A., ©1977 Gordon L. Well, Stern and Day Publishers

It was adherence to his understanding of the Golden Rule that kept J. C. Penney from being swallowed up in a merger with Sears, Roebuck and Company when the mail-order firm decided to enter the retail market.

Mr. Penney stepped down as president of the company in 1917. He continued to serve as chairman of the board, but he wanted the other men in the business to realize that he was not indispensable. The company continued to prosper. By the end of 1926 there were 747 stores, and the stores topped \$100 million in sales that year.

Mr. Penney began using substantial portions of his earnings to fund various projects. One of these was an experimental farm which he started for the purpose of breeding high-quality dairy cattle in rural New York State.

Another project was Penney Farms in Florida. Mr. Penney bought a 120,000-acre tract of timberland which he hoped to transform into a community of model farms. Carefully selected families were provided with agricultural training and financial assistance to enable them to buy their own farms. Mr. Penney used the same principle of partnership management (the manager as part-owner) which had worked so well in his stores.

Mr. Penney also became involved with the City National Bank of Miami, first as a substantial shareholder and then as chairman of the board. His interest in the bank was not to enlarge his own fortune but to assist an enterprise which was playing a vital role in the economic development of the entire state of Florida.



Grant Helman

One of Mr. Penney's interests was breeding superior livestock. His experimental farm was where Foremost brand dairy products originated.

• *Roots of bitterness are not easily removed.*

Then came the stock market crash of 1929 and the Great Depression of the 1930s. Feeling that his own financial situation was secure, Mr. Penney borrowed large amounts of cash against his personal holdings to try to keep the bank from collapsing and also to maintain the various philanthropies he was supporting at the time.



Main Street Merchant, ©1948 Norman Beasley, McGraw-Hill Co., Inc.

Even during the Depression the company continued to expand, opening many new stores. It was rumored that Mr. Penney received a dollar a day from every store in the chain, but his earnings actually came only from the stock he held.

Within a matter of months Mr. Penney was over seven million dollars in debt, and the Penney

Farms project had to be abandoned. He had also lost most of his stock in the company, and the bank eventually failed.

Not only did he lose his riches, but also his reputation was attacked by people who questioned his motives and doubted his integrity. A lawsuit was filed against Mr. Penney by angry stockholders who thought he could have kept the bank solvent if he had chosen to do so. Few people realized that he had lost all his personal wealth trying to avoid its failure. A tremendous amount of resentment was now added to what had already built up in his life.

Mr. Penney's response to this difficult situation is evidence that even though he had paid lip service to the Golden Rule, he had not really understood it. This crisis in his life revealed that all along he had been "doing unto others" with the expectation of eventually receiving some benefit from it.

In the stores his ultimate motive for applying the Golden Rule had not been a desire to meet people's basic needs (genuine love). Instead he had simply "cashed in" on the fact that customer satisfaction was the best basis on which to build a profitable business. Serving the customer, in his view, was mutually beneficial. He had definitely expected a return on his investment.

The fact that Mr. Penney's efforts to save the bank were similarly motivated would account for the intensity of the bitterness he felt whenever people accused him of selfish intentions. Through these painful experiences Mr. Penney began to realize how completely he had been captivated by the power of money and how little regard he had had for the power of God. He came to understand that "a man will be a failure in life if he can be known for nothing but his wealth."

One of the most humiliating experiences was having to accept a salary from the company. He had drawn a salary during the years at Kemmerer, but since 1909 his income had been entirely from earnings on the shares he owned in the stores. For three years beginning in 1932, he had to swallow his pride and go back on the payroll.

During the tedious, drawn-out court proceedings, Mr. Penney carried in his pocket a piece of paper on which he had copied this verse: "*He shall cover thee with his feathers, and under his wings shalt thou trust: his truth shall be thy shield and buckler*" (Psalm 91:4). Apparently, these words were comforting to him, but he still had not experienced God's *agape* love.



The Chain Store Tells Its Story, John P. Nichols, ©1940 Institute of Distribution, Inc.

During the 1930s and 1940s, chain stores like J. C. Penney faced opposition from those who felt they were hurting local economies by driving locally owned retail stores out of business. A large amount of money and effort was spent to convince the public that this was not the case.

One day in 1933 Mr. Penney arrived in Battle Creek, Michigan, on his way to a store convention. The discouraged businessman was indeed fighting a battle that day, but he did not yet realize it was a spiritual battle with bitterness.

Over one thousand retail department stores all across the nation had his name emblazoned above their front doors. J. C. Penney was a name that had become almost as well-known as the President's. Yet, the Depression had left the man himself practically destitute.

When he stood that noon to speak at a luncheon at the Penney store in Battle Creek, he was so sick he could hardly finish his speech. A physician friend at the meeting agreed to examine him at his clinic afterward. Mr. Penney had an acute case of shingles, perhaps the result of prolonged bitterness. The doctor had him admitted to the hospital and told him to cancel the rest of his trip.

The famous merchant was too exhausted to protest, but his main worry was that he did not have enough money to pay for medical treatment. He did not voice this concern because he was sure that the doctor believed he was still fabulously wealthy, as did nearly everyone else. Within a few days he was better physically, but he had become even more depressed.

One night he took a sedative to help him sleep, but only an hour later he awoke with the overwhelming sensation that he was about to die. He got up, wrote letters to his wife and children (he had remarried) and went back to sleep, convinced that he would die during the night.

Early the next morning he woke up surprised that he was still alive. He arose, dressed, and went downstairs to have breakfast. He soon discovered that the cafeteria was not open yet, and as he stood in the deserted corridor, a deep sense of loneliness washed over him.

Then he heard singing. In the early morning stillness he was barely able to make out the words of a familiar hymn:

**"Be not dismayed whate'er betide,
God will take care of you. . . ."**

Drawn by the love expressed in the music, Mr. Penney began walking toward the sound. Soon he found himself outside the door of the hospital chapel. He slipped into the room and sank down into a seat at the back.

**"No matter what may be the test . . .
Lean, weary one, upon His breast,
God will take care of you."**

Someone quietly read, *"Come unto me, all ye that labour and are heavy laden, and I will give you rest. Take my yoke upon you . . . and ye shall find rest unto your souls"* (Matthew 11:28–29).

Silently the man in the back pew groaned a prayer: "Lord, I can do nothing. Will you take care of me?" With those words he expressed his desire no longer to rely on himself but to trust in Jesus for his salvation. He sensed an immediate change. It was as if a great weight had been lifted from his spirit. He felt that he was walking out of darkness into the light.

After that experience in 1933 many things were different for J. C. Penney. For the first time he clearly understood that even though his company's success had come from following the Golden Rule, he had personally allowed resentment to keep him from loving others the way Christ commanded.

God began to deal with the bitterness in his heart, starting with obedience in a very small matter. In walking from his home to his New York office each day, Mr. Penney passed an uptown branch of one of the banks he felt had treated him unfairly. For a long time he had made a point of crossing the street so he would not have to pass close to the building.

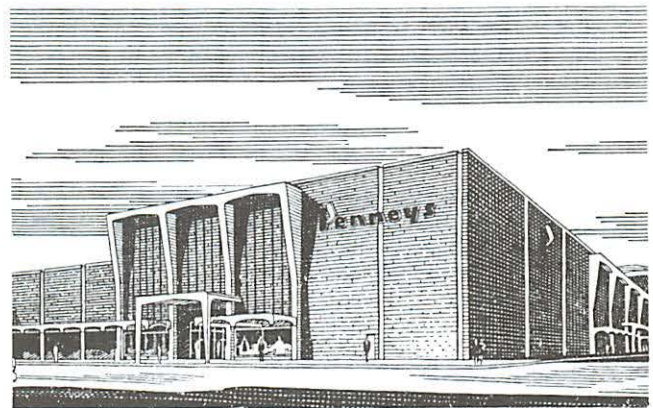
One morning God prompted him to put aside this petty resentment. As he neared the front door of the bank, a security guard was standing on the steps enjoying the bright sunshine. Mr. Penney greeted

him, and the man responded with a friendly word and a smile. Mr. Penney said later, "For the first time in years I found myself feeling better about a number of things." Gradually, a spirit of gratitude replaced the bitterness he had harbored.

As Mr. Penney worked at resolving his financial problems, he began consciously trying to follow God's plan for his life, which he now realized was something more than just making money. It was a couple of years before Mr. Penney was ready to make a public profession of his faith in Christ, but shortly after that he was baptized. He joined a businessmen's prayer group in New York City and started learning how to pray.

Mr. Penney later wrote of this time period: "My dealings throughout my business life had been charted by the compass point of the Golden Rule; yet, for a long time I had had a deep inner longing to better understand the power of God and be used more adequately to give it expression." That power was, of course, the power of genuine love.

His experience of that love and his new understanding of the Golden Rule motivated him to become involved with the Laymen's Movement for a Christian World, an organization which encouraged Christian men to make it their goal to "build Christianity into the everyday life of the world."

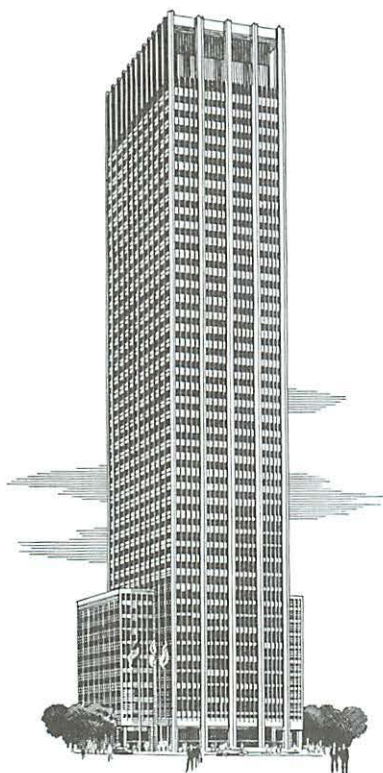


By the early 1960s there were over 1,700 J. C. Penney stores in 49 states. The chain grossed over a billion and a half dollars in 1961.

One night after he had spoken to a group of these men on the topic of the application of Christian principles in business, a pastor challenged him with the idea that his message was something the whole country needed to hear. Mr. Penney did not feel adequate as a public speaker before general audiences and said, "No, I couldn't do that."

"Oh, yes, you can," replied the pastor, "if you will only give yourself now, as wholeheartedly as

you've given your money in the past." As Mr. Penney thought about these words he gained new insight. Recognizing that genuine love is giving to the needs of others without expecting anything in return, he decided that he could indeed give of himself.



The Penney Idea, William M. Batten, The Newcomen Society in North America

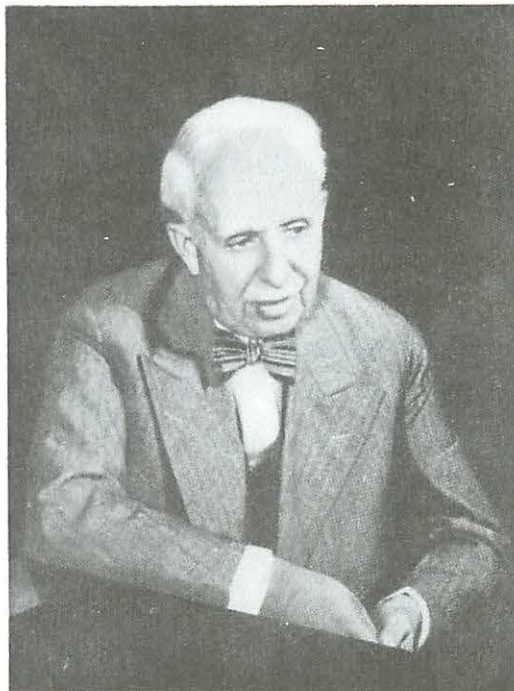
The headquarters of the J. C. Penney Company is a forty-five-story building in New York City.

In the years that followed, Mr. Penney traveled extensively in the United States and Canada, speaking to various groups about how God had changed his life.

Even into his late eighties, Mr. Penney went every day to his office on the forty-fifth floor of the Penney building in New York City, continuing to work as honorary chairman of the board of the company he had founded.

In his later years Mr. Penney was fond of saying, "What I have done, anyone could have done. I haven't any special attainments."

Although he was one of the most successful businessmen in North America during the first half of the twentieth century, his life would have ended in failure had he not, by the grace of God, overcome the bitterness that had stifled the flow of genuine love through his life.



Mum Street Merchant, © 1948 Norman Beasley, McGraw-Hill Co., Inc.

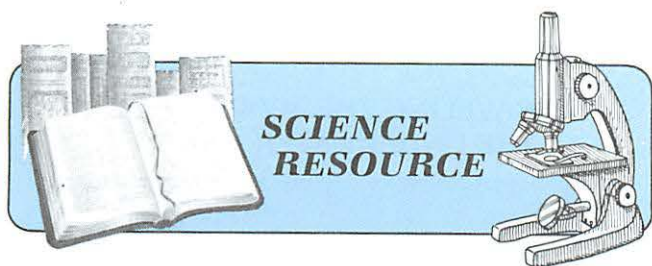
**J. C. Penney
1875–1971**

PROJECT

Discuss the following questions:

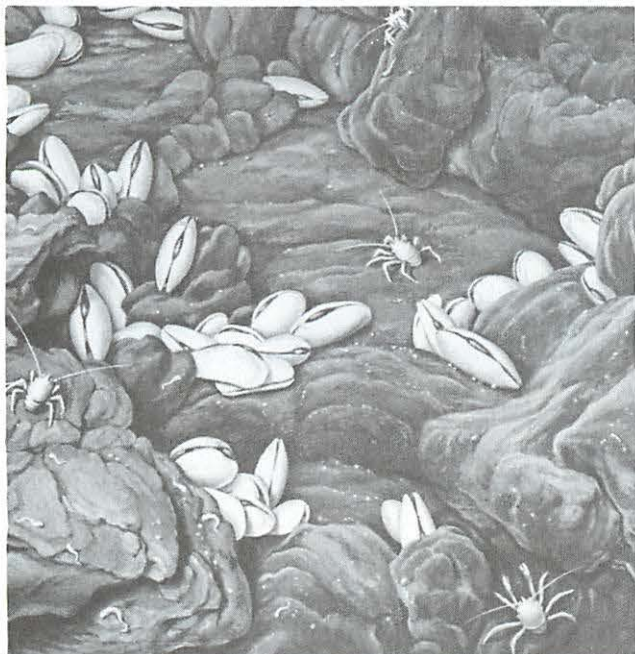
1. In addition to bitterness, Scripture identifies two other root problems: temporal values and moral impurity. (See Hebrews 12:15–17.) How could either of them also prevent a person from fulfilling the Golden Rule?
2. When J. C. Penney began the Golden Rule stores, they were all partnerships. In fact, for a period of time, partnerships were the basis for expansion of the chain. Examine the Scriptural warnings against this method, and discuss what long-term consequences will come to people who choose to follow this common business practice.
3. What Scriptural financial principle did Mr. Penney violate when he pledged personal assets to try to keep the bank in Miami from collapsing? How many times does Proverbs warn against such a practice?
4. Compare the life of J. C. Penney to that of the famous retailer John Wanamaker. (See *Wisdom Booklet* 38, pages 1911–1930.) List the seven business principles to which Mr. Wanamaker was committed. Then indicate how Mr. Penney did or did not follow each one.

Date completed _____ Evaluation _____



SCIENCE RESOURCE

HOW IS THE "GOLDEN RULE" CLARIFIED BY SYMBIOSIS IN THE WORLD OF NATURE?



Tom Prentiss, based on photo by Kenneth L. Smith, Jr.

More than a mile and a half below the surface of the ocean, a tiny research vessel called "Alvin" maneuvered among the crevices of a dormant volcanic vent. As its lights illuminated the total darkness, Alvin's cameras photographed animals never before seen by man.

Hordes of bright red tube worms more than a yard long rose up from the bottom. Large white clams a foot in diameter covered the ocean floor. Shrimp, crabs, and fish were everywhere. Yet, there was no apparent food supply to support this underwater oasis.

Because light does not penetrate any deeper than the top three hundred meters of the ocean and temperatures at this depth are very close to freezing, researchers ruled out the possibility of photosynthesis. They realized that the newly discovered world had to depend upon some hidden source of energy.

Water samples collected by "Alvin" revealed a volcanic hot spring, rich in hydrogen sulfide (H_2S).

Normally, hydrogen sulfide is a highly toxic chemical similar to cyanide, but these animals were thriving on it. Indeed, they were dependent upon it for their very existence.

As researchers worked to unravel the mystery, they discovered yet another example of a common biological occurrence. Learn how *symbiosis*, the interaction of these and other strange plants and animals, illustrates a "do-gooder's" level of love.

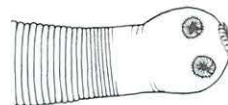
What are the three types of symbiosis?

Symbiosis is a Greek word, referring to a condition of living together. It is made up of two Greek parts: *sym*, meaning "together," and *bios*, meaning "life." While many plants, animals, and bacteria live very closely together, they often exhibit different types of relationships.

- In some symbiotic relationships, one organism takes advantage of the other at the other's expense. Zoologists call this type of symbiosis **parasitism**. One organism continually gives sacrificially even though the other organism never contributes to the relationship and only takes from it.

The word *parasite* comes from the Greek word *parasitos*, meaning, literally "to eat at another's table." The technical definition of a parasite is simply "one that takes food from another." Most parasites, however, are careful to limit the amount of food they take so they do not threaten the life of the host. In other words, they take as much as the host can "give" without dying. If the host should die, the parasite would also die.

Tapeworms live in the intestinal tracts of men and animals in areas of the world where sanitation is poor.



The sheep tick is a harmful insect that lives on sheep.

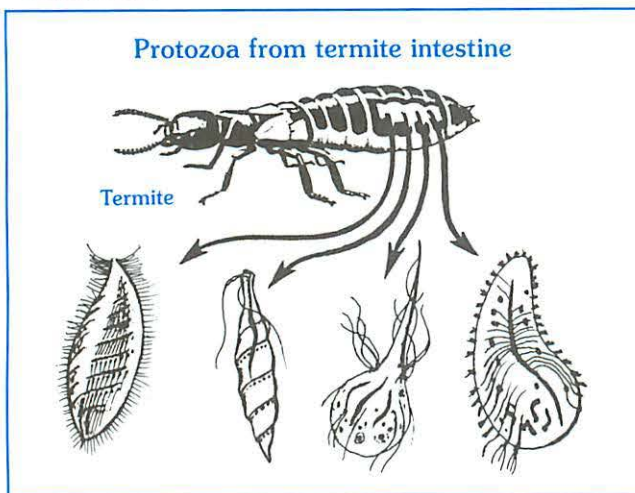


The small mite (circled) lives on the flea, which lives on the cat.



Hosts make a "sacrifice" in order to allow a continued relationship with a parasite.

- In a second type of symbiotic relationship, both organisms benefit one another. Each organism gives and receives in return. Zoologists call this relationship **mutualism**. In many instances the partners are so dependent upon one another that they cannot live apart. The benefits each one receives for its services are often necessary to sustain life.



Zoology, by WB Burnett, Harvey Fisher & Herbert S. Zim, Golden Press

Termites and the protozoa in their intestines have a mutualistic relationship. The termites feed the protozoa cellulose (wood), and the protozoa feed the termites protein. Both benefit from their “gifts” to one another.

- A third type of symbiosis is much less common. It involves a relationship in which one party benefits the other only as long as no sacrifice is required. Zoologists call this relationship **commensalism**. Like parasitism, commensalism is a one-way street. However, it differs from parasitism in that the host does not suffer any consequences for its “generosity.”

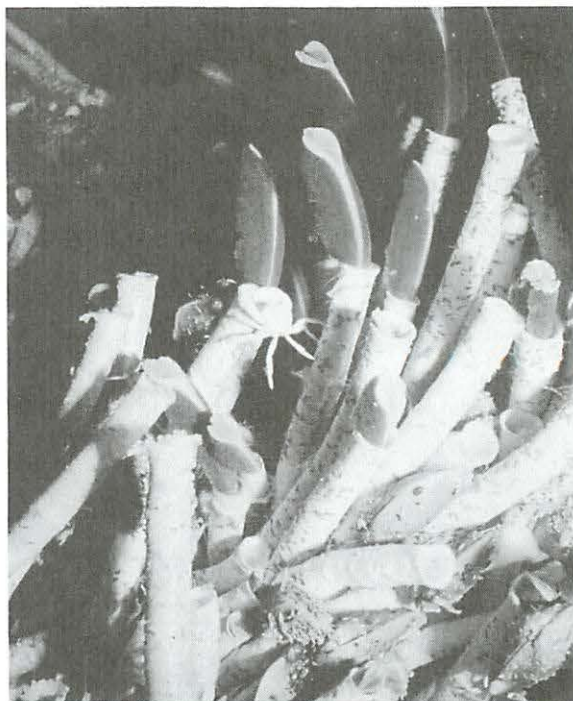
The term *commensalism* comes from the Latin prefix *com*, meaning “together,” and the root *mensa*, meaning “table.” In commensalism one partner provides a “table” (food) for another without any sacrifice to itself.



Watching Fishes: Life and Behavior on Coral Reefs. ©1985 Roberta Wilson & James Q. Wilson, Harper & Row Publishers

The clown fish benefits from the protective tentacles of the poisonous sea anemone, but the anemone receives nothing in return.

UNRAVELING THE MYSTERY OF THE UNDERWATER OASIS



R.R. Hessler, Scripps Institution of Oceanography

***Riftia* is a type of tube worm that has no mouth or digestive system and must rely on a special symbiotic relationship for its food.**

The community of plants and animals that “Alvin” found at the bottom of the ocean illustrates symbiotic mutualism. That is to say, the organisms depended upon one another for mutual support. One type of bacteria in particular kept the community alive. This bacteria consumed inorganic hydrogen sulfide and produced organic food and energy from it.

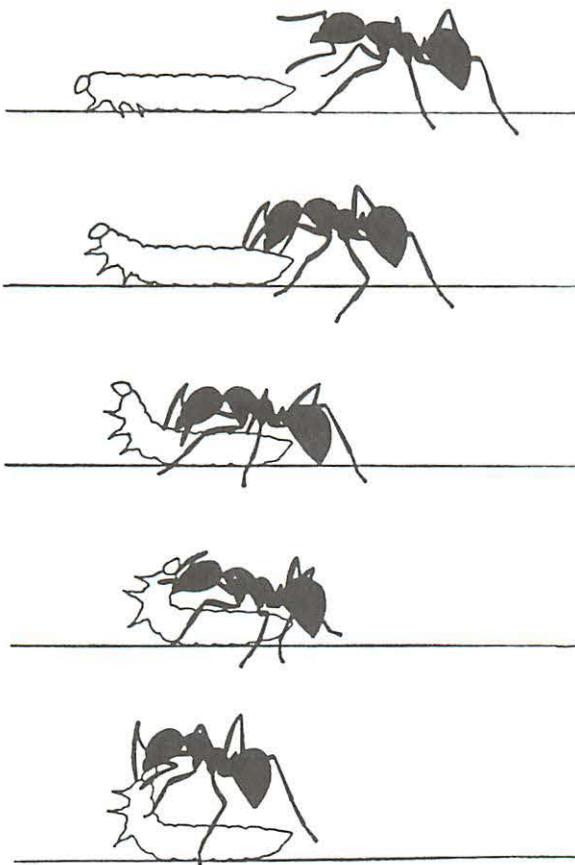
The bacteria provided the foundation for the food chain that fed the entire community. In return, one of the residents, the tube worm (*Riftia pachytila*), actually nourished the bacteria inside its own body. It collected carbon dioxide, oxygen, and hydrogen sulfide from the water and transported these raw materials to the bacteria, which it kept in a sack-like structure called a *trophosome*.

Individual bacteria operated much like workers on an assembly line, producing organic food for their hosts as the component parts were furnished to them by their hosts. Both the bacteria and the worms benefited from this relationship. In fact, neither could survive without the other. The riftia fed the bacteria and the bacteria fed the riftia.

1 THE SYMBIOSIS OF GIVING IN ORDER TO RECEIVE IS CALLED MUTUALISM.

Ants are mutualistic in their relationships with others. In fact, there are more than 3,000 different kinds of insects ants keep in their nests for their mutual benefit.

One kind of beetle in particular is a real favorite of ants. This beetle often sits up and begs like a dog, waving its legs to attract the ant's attention. The ant lifts the beetle over its head and licks a tasty secretion from the beetle's underside. In return, the beetle opens its mouth, and the ant feeds it a droplet of its own food.



The World of Ants, Remy Chauvin, ©1969 Librairie Plon, Hill and Wang

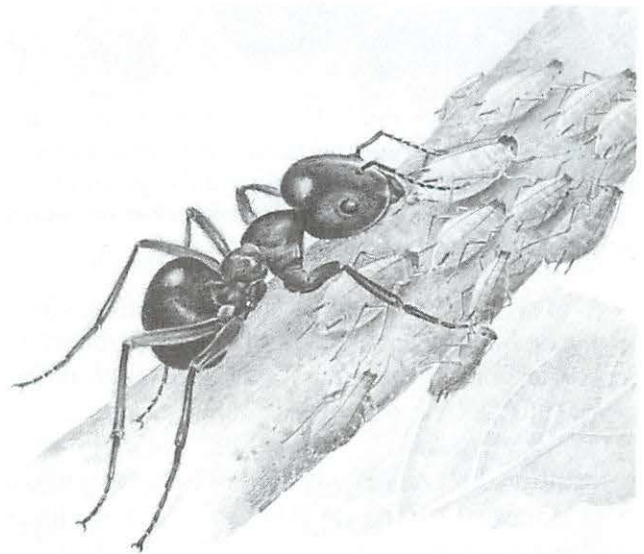
**An ant and its oversized partner exchange gifts.
One gives in order to receive from the other.**

The larvae of other beetles, especially the rove beetle (*Lochmechusa pubicollis*), are so attractive that some ants actually adopt them and raise them in their own nurseries. The rove larva gives off a perfume which prompts ants to take care of it. It imitates the hungry behavior of baby ants so effectively that ant "nurses" willingly care for it and feed it.

In return, the larva provides food for the ant colony by secreting a waxy substance from glands

along the side of its body. After the larva has matured into a beetle, it leaves the nest in search of another colony of ants. There it spends the cold winter, feeding and being fed by its new hosts. In the spring it returns to the ant colony of its youth and lays its eggs near the nest in order to continue the relationship for another generation.

In some cases the very existence of an insect is dependent upon a mutualistic relationship with ants. Europe's beautiful blue butterfly, for example, cannot survive without ants to care for it while it is in its caterpillar phase. Ants carry these infant caterpillars into their nests and care for them even as they do their own offspring. Though the caterpillars attack and eat some of the ant's own larvae, the ants tolerate the stranger in order to receive the sugary syrup it secretes whenever an ant strokes it with its antennae and legs.



Ants also form a symbiotic relationship with aphids. Some actually raise aphids from eggs which ants gather and keep in their nests. In return, ants shepherd the aphids, carrying them from pasture to pasture and protecting them from predators. See *Character Sketches, Volume III*, pages 130–138 for more information.

• Oxpeckers receive free meals in return for their alertness.

Oxpeckers have such long toes and sharp claws that they are able to ride on the backs of large mammals such as the rhinoceros and water buffalo. Their stout bills enable them to search for insects and ticks hidden in the folds of skin or under the fur of their hosts. These winged passengers are welcome guests because they not only rid their hosts of

troublesome parasites, they also warn of approaching danger. From their vantage point above the tall grass they can spot a predator while it is still too far away to be threatening.



Rhinos and water buffalo have notoriously poor eyesight. They tolerate the presence of oxpeckers in order to rid themselves of parasites and to benefit from the oxpeckers' keen eyesight. The oxpeckers in return get a free ride and a free meal.

Moving from animal to animal, oxpeckers feed on a wide assortment of ticks and other troublesome parasites. Sometimes they are so bold as to probe deeply into an ear, nostril, or even a mouth to find the annoying pests. Any other birds attempting the same intrusions are simply not tolerated. Only when there is mutual benefit do rhinos and water buffalo endure such indignities.



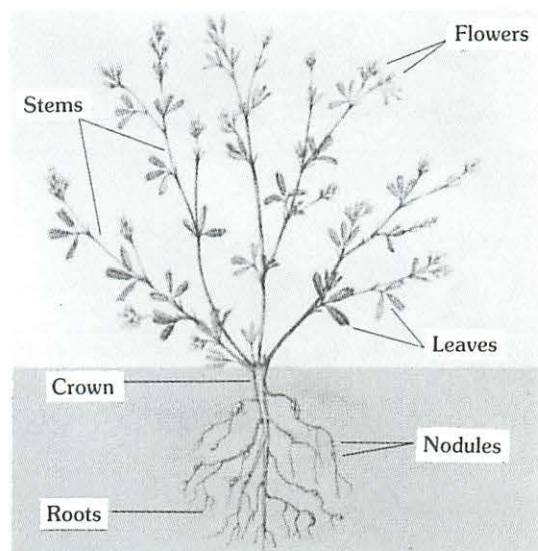
The bee eater feeds on insects flushed by the kori as it walks through the tall grass. In return, the kori bustard can eat contentedly, relying on the bee eater to stand guard and sound the alarm if danger approaches.

Some birds even ride on the backs of other birds. The large kori bustard, for example, indulges the presence of the tiny carmine bee eater.

• **Beans and peas grow best in the presence of certain bacteria which they nurture and protect.**

Legumes such as beans and peas have a mutualistic relationship with certain bacteria. In fact, the two are so closely tied together that neither can survive alone.

Beans and peas have growths called *nodules* on their roots. These nodules provide nourishment and shelter for bacteria. In return, the bacteria take nitrogen from the air and convert it to fertilizer. Without high-nitrogen fertilizer, legumes do not grow well, and without the nourishment and protection of the root nodules, the bacteria do not grow well either.



Alfalfa plant with nodules containing nitrogen-fixing bacteria

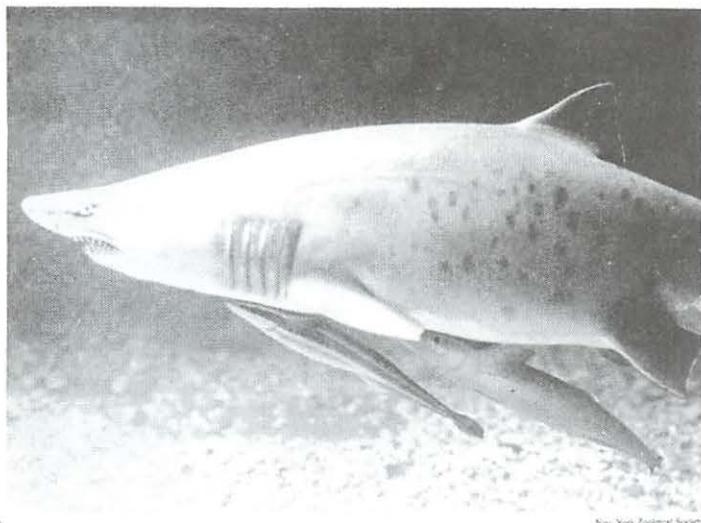
Each partner in this symbiotic relationship benefits the other. However, the association has its limits. If the soil is deficient in the element boron and the plant cannot supply its host bacteria with enough nourishment, the bacteria will attack the plant and consume it like a parasite.

On the other hand, if the bacteria encourage the plant to invest *too* much on its energy-producing nodules for the bacteria, the plant may fail to develop a proper root system and die.

DO YOU DO GOOD ONLY WHEN YOU CAN RECEIVE GOOD IN RETURN?

2 THE SYMBIOSIS OF GIVING WITHOUT SACRIFICE IS CALLED COMMENSALISM.

Remoras are small, helpless fish equipped with a sucker disk instead of a dorsal fin. The disk has no teeth in it, relying only on a strong vacuum to hold it tightly to its commensal host. Even though remoras are good swimmers, they are most likely to be found hitching rides on sharks, rays, and even turtles.



New York Zoological Society

When the host feeds, the remoras detach themselves and gather the leftover scraps. Then they quickly reattach themselves as their host leaves the area in pursuit of another victim.

The suckers do not harm the host in any way, and the remoras' sleek bodies produce little drag. They eat only scraps that would otherwise be wasted, and they are absolutely no threat or inconvenience to their much larger hosts.

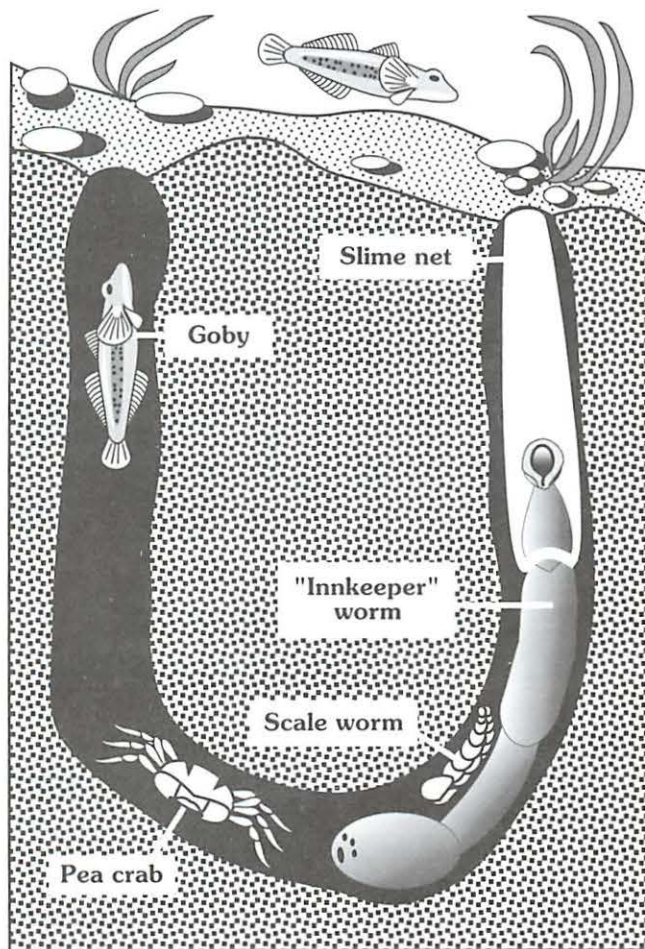
Sharks provide remoras with protection, transportation, and food, but receive nothing in return. Remoras have never been observed cleaning or helping their hosts in any way. Sharks simply tolerate them unless they become too large or get in the way. In that case, the relationship ends quickly—to the detriment of the remoras. Fairly large remoras are frequently found in the stomachs of sharks.

- **The innkeeper worm stays open for guests only as long as it is convenient.**

The innkeeper worm prepares a U-shaped house in the shallows of many coastal waters. It spends its entire life there, constantly pumping fresh water in one end of its house and out the other.

This foot-long worm eats by spinning a clear “see-through” net over its head. As water passes through the net, the innkeeper filters out tiny organisms. When the net is full, the innkeeper gulps down both the net and its contents. In good conditions, the innkeeper worm may spin and consume a new net as often as thirty times an hour.

The innkeepers' unique homes provide shelter for a number of guests. Even though the guests pay no rent, the innkeeper tolerates their presence, supplies them with fresh water, protects them from predators, shares leftovers, and keeps the inn immaculately clean,



Guests of this foot-long innkeeper worm include the goby, pea crab, and scale worm. They depend on their host for their well-being, yet they pay no rent.

If the “inn” becomes too crowded, however, the inconvenienced innkeeper closes it and moves to another site, leaving its guests to fend for themselves.

DO YOU DO GOOD ONLY IF IT DOES NOT COST YOU ANY SACRIFICE?



To learn about another example of commensalism, study the pack rat in Volume III of *Character Sketches*, pages 81–88. The pack rat also lives with numerous guests until their presence becomes an inconvenience.

3 THE SYMBIOSIS OF WILLING SACRIFICE IS CALLED PARASITISM.

Corn, sugarcane, and sorghum occasionally fall prey to one of the few truly parasitic flowering plants in the world. This deceptively beautiful plant, called *witchweed*, once grew only in Africa, but it now flourishes in three other areas of the world as well—Asia, Australia and North America.

Witchweed produces as many as 500,000 seeds from a single plant, and any individual seed can lie dormant for more than twenty years. Then under the right conditions, the seed can spring forth suddenly in pursuit of a host. The seeds are sensitive to a rare chemical produced only by the roots of grasses such as corn, cane, and sorghum. If a witchweed seed comes within a tenth of an inch of a grass root and “recognizes” that particular chemical, it germinates, and its own roots begin to follow the chemical trail of its host.

As the *witchweed* root catches up to the host’s root, it produces an enzyme that breaks down the cell walls of the host’s root so it can enter. Once

inside, the witchweed root begins to swell. Fingerlike tentacles, called *haustorium* (from the Latin word meaning “to drink”) work their way into the root system of the host, absorbing both its water and its nutrients.

Within twenty-five to fifty days, the witchweed eventually sends stems above the ground. Shortly after its green leaves unfurl, it begins to produce its own food, but it still takes food from its host without returning anything.

In spite of the ongoing drain, the host must continue to supply water and nourishment to its own roots, stems, and leaves. Even though the sacrificial drain may so weaken the host that its own ability to bear fruit is greatly reduced, it remains faithful to its appointed task. To falter would mean jeopardizing its own existence as well as that of future generations.



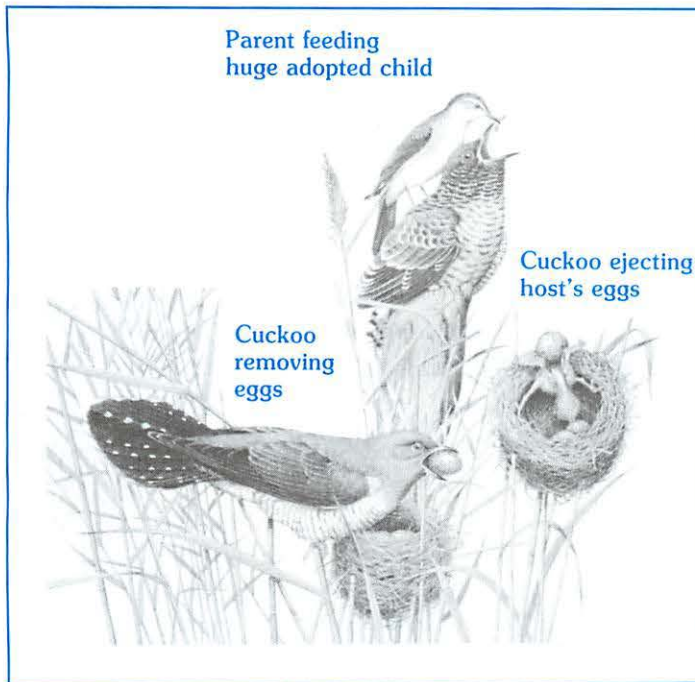
Corn stands tall in spite of the parasites which drain its resources. Though there are thousands of different plant parasites, few of them do much harm. Usually a parasite is much smaller than its host and is rarely more than a nuisance. Yet, if a host does not endure the “sacrifice” needed to feed both the parasite and its own members, it will most likely wither and die.

• *Hedge sparrows sacrifice their time and energy without thanks or appreciation.*

More than 300 different types of birds, including the tiny hedge sparrow, find themselves raising the young of the European cuckoo. They do so faithfully, even though the young cuckoos usually outgrow the sparrows’ own young and may even force them from their own nests.

The struggle begins when the female cuckoo lays her eggs in the nest of another bird. Oftentimes the egg is actually colored to resemble the others in the nest. When the cuckoo eggs hatch, the adoptive parents care for the young cuckoos as if they were their own.

Because cuckoos grow exceptionally fast, they require added attention and great sacrifice on the part of their adoptive parents. However, in most instances they are raised peaceably, and both natural and stepchildren leave the nest successfully.



AIRC's of Nature, Richard L. Schell, ©1988 The Reader's Digest Association, Inc., Used by permission

Some species of cuckoos push their hosts' eggs out of the nest so they get all the attention from their stepparents. Other species remove their hosts' eggs even before they lay their own.

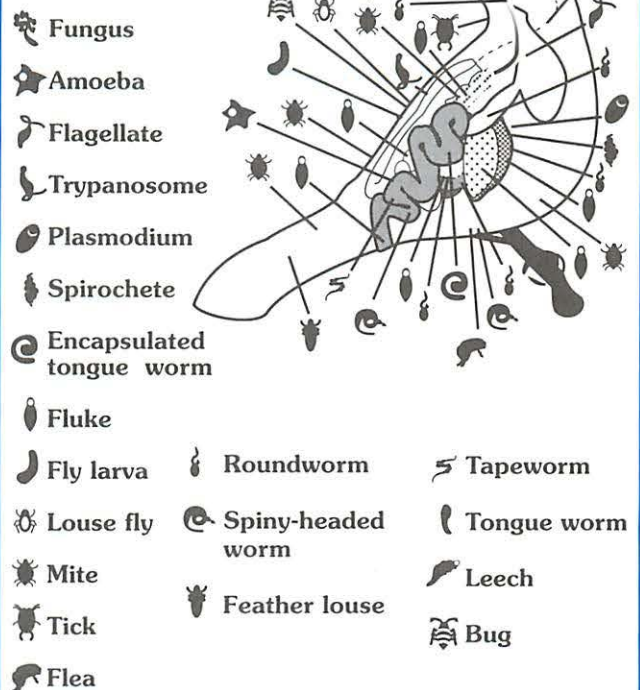
• Every living creature must endure the sacrifice of parasites.

Every living creature has one sort of parasite or another that it must endure. Even the flea has smaller "fleas" that prey upon it, and the parasitic fleas have even smaller "mites" that prey upon them.

The average bird, for example, has more than twenty different creatures that invade its body. Some live in its feathers; others live next to the skin. Internal parasites burrow into muscle tissue or fix themselves to a bird's intestinal walls.

Regardless of the sacrifice demanded, however, most birds survive. They endure the hardship and continue to sing a joyful song all day long.

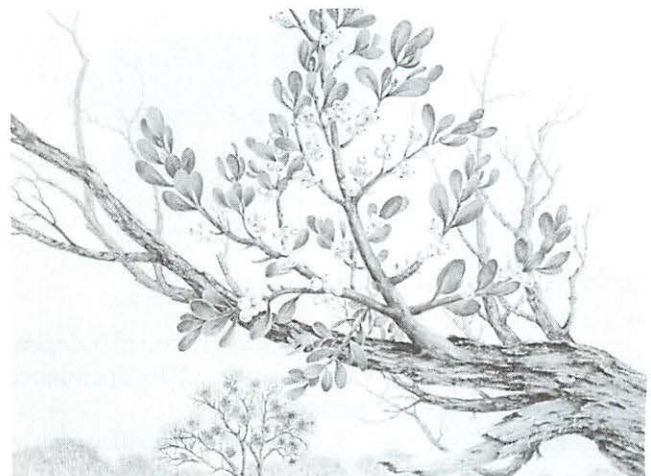
A FEW OF THE PARASITES BIRDS MAY HOST



The next time you hear a bird singing, remember that it is sacrificially caring for hundreds of parasites within its body.

DO YOU DO GOOD TO BOTH FRIEND AND ENEMY WITHOUT CONCERN FOR YOUR SACRIFICE OR A REWARD?

What tree endures the sacrifice that mistletoe requires and stands tall for hundreds of years?



Study the mistletoe plant in Volume III of *Character Sketches*, pages 142–150, for more information about trees that are parasitized by mistletoe.

HOW ARE THE THREE LEVELS OF SYMBIOSIS ILLUSTRATED IN SCRIPTURE?

Behind every action of doing good should be the motivation of love. Yet, even the motive of love can be tainted by selfish designs. Because of the need to distinguish between the motives of love, God uses three Greek words to define love. In a sense, the three Greek words for love parallel the three types of symbiosis.

1. EROS LOVE AND MUTUALISM

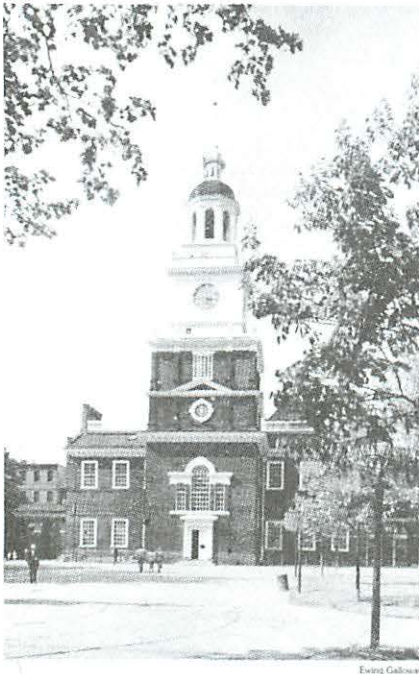
Eros (ἔρως) is a kind of love that is motivated by a desire to receive pleasure. It is self-centered and based on giving only to receive.

Erotic love is like mutualism, in that one gives in order to receive.

2. PHILEO LOVE AND COMMENSALISM

Phileo (φιλέω) is a second Greek word translated as “love.” It is the root from which we get the name *Philadelphia*, the “City of Brotherly Love.”

Phileo love is characteristic of the love between friends, acquaintances and neighbors. Yet, when this type of love requires sacrifice, it often grows cold. It is like commensalism, where one gives to another as long as no sacrifice is required.



The city of Philadelphia is the home of Independence Hall, where the Declaration of Independence and Constitution were signed.

Phileo love will occasionally sacrifice for a brother who is lovable. However, a country that is founded on the kind of love which loves only the lovely cannot long endure.

3. AGAPE LOVE AND PARASITISM

Agape (ἀγάπη) love is a love that is unconditional and sacrificial. It keeps on giving even after the loving begins to hurt. Agape love is the kind of love one has for an enemy. There is nothing to be gained, no gift in return, and it may require sacrifice, even as a host continues to “give” to a parasite.

PROJECT 1

Study what Scripture has to say about loving your enemies. How do mutualism and commensalism short-circuit God’s design for rewarding those who sacrificially love their enemies?

- Exodus 23:4–5
- Proverbs 24:17
- Proverbs 25:21–22
- Matthew 5:43
- Matthew 25:31–46
- Luke 6:27–35
- Acts 20:35
- Romans 12:20
- Galatians 6:7–10
- I Thessalonians 5:15
- I Timothy 6:17–19
- I Peter 3:8–9

“For if ye love them which love you, what thank have ye? for sinners also love those that love them.

“And if ye do good to them which do good to you, what thank have ye? for sinners also do even the same.

“And if ye lend to them of whom ye hope to receive, what thank have ye? for sinners also lend to sinners, to receive as much again.

“But love ye your enemies, and do good, and lend, hoping for nothing again;

“And your reward shall be great, and ye shall be the children of the Highest: for he is kind unto the unthankful and to the evil.”

Luke 6:32–35

PROJECT 2

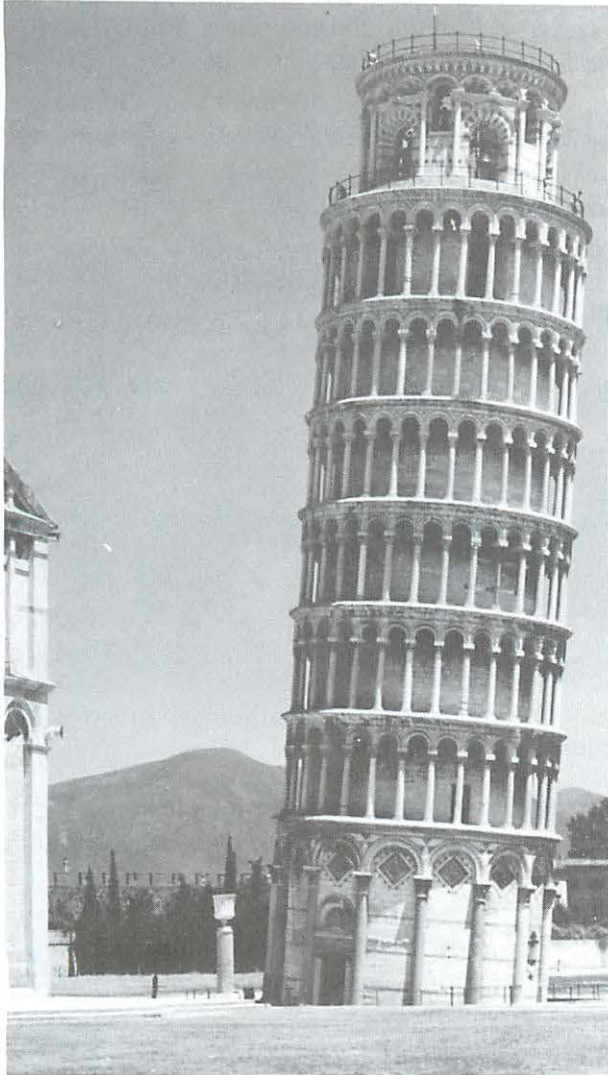
Describe the relationship you have with the following people, using the Greek words for the levels of love and the summary questions provided for each type of symbiotic relationship.

- Your parents (during your childhood) _____
- Your parents (when they are elderly) _____
- Your brothers and sisters _____
- A poor family _____
- An enemy (former friend) _____

Date completed _____ Evaluation _____



HOW DO HORIZONTAL AND VERTICAL LINES ILLUSTRATE THE TWO PILLARS OF THE LAW AND THE PROPHETS?



The Leaning Tower of Pisa is a curious spectacle which is in danger of falling because its foundation is not firmly supported on both sides.

In A.D. 1173 the residents of Pisa, Italy, began building a bell tower to grace their town with beautiful melodies and elegant architecture. The project was not an easy one, but they were prepared to see it through to the end. Little did they know that it would require the work of eight generations and over two hundred years to finish. Neither did they

know that the tower would eventually become one of the most famous towers in the whole world.

Much to the dismay of the engineers who laid the foundation for the tower, the footings began to sink under the weight of the first three stories. With each new layer of marble the tower listed more noticeably. Yet, the builders continued to build, and the tower continued to lean. Today the tower is about seventeen feet off-center vertically and continues to shift further with each passing year.

Eventually the tower will fall—a victim of its own shifting foundation. One side of the foundation has stood firm throughout its history. There is no problem with the floor to the left of the entrance. The difficulty arose from weaknesses on the right side. Without equal support from both sides of the foundation, the tower began to lean.

The same is true with the Law and the Prophets. The Law and the Prophets rest on two foundational pillars. If either pillar is weakened, our understanding begins to lean. It “stands straight” only when both pillars are strong and firm.

What are the two pillars of the Law and the Prophets?

The two pillars of the Law and the Prophets are summarized in these two commandments:

“... Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind. This is the first and great commandment. And the second is like unto it, Thou shalt love thy neighbour as thyself. On these two commandments hang all the law and the prophets” (Matthew 22:37–40).

Learn how two types of lines illustrate these two pillars of the Law and the Prophets.

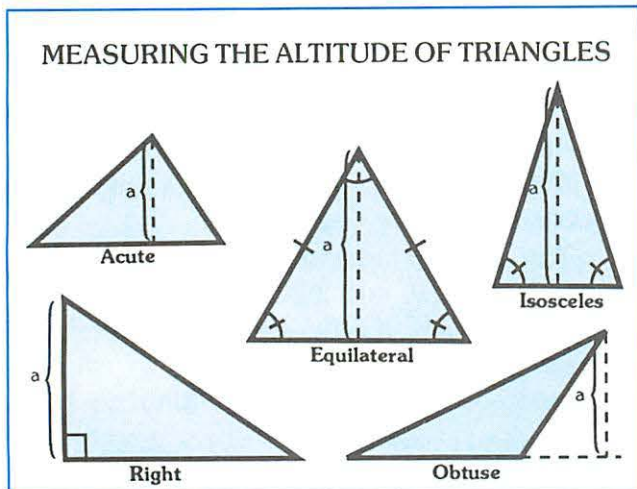
1 Vertical lines illustrate the commandment to love God with all our hearts, souls, and minds.

The word *vertical* comes from the Latin word *vertex*, meaning “top” or “summit.” Its connotation is literally “the highest.” A vertical line is one which runs toward the highest point. It reaches directly overhead to the zenith.

In geometry a *vertex* is the highest point opposite the base of a triangle. Mathematicians define the *altitude* of a triangle as a vertical line drawn from the vertex perpendicular to the base.

This line is the shortest distance between the base and the vertex. All other lines are longer.

Geographers determine the altitude of a mountain in the same way. They measure the vertical distance between its peak and its base. Any other line yields a false measure of the mountain's altitude. For example, a twisting road running up the side of the mountain might be several times longer than the actual perpendicular distance from the base to the summit.



The altitude of a triangle, "a," is the vertical distance between its base and its vertex. Because the altitude is a vertical line, it is also the *shortest* distance between the base and vertex.

Other examples of vertical lines include flagpoles, radio station antennae, sailboat masts, fence posts, telephone poles, elevator shafts, tree trunks, and chimneys. Make a list of all the vertical lines you can find in the course of a single day. See if you can collect at least a hundred examples.



The skylines of cities such as San Diego are filled with vertical lines.

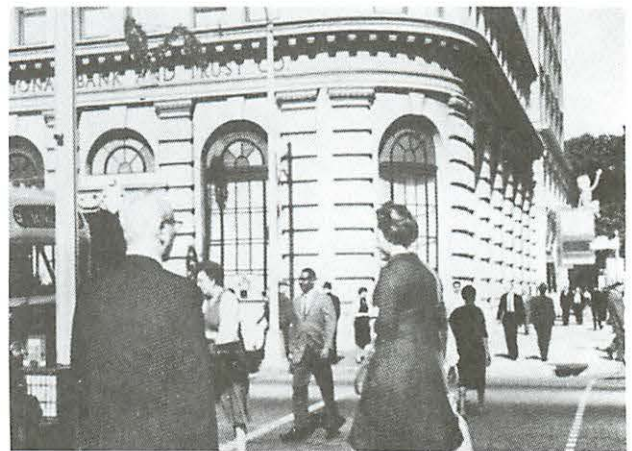
Vertical lines reach for the heavens.

2 Horizontal lines illustrate the commandment to love our neighbors as ourselves.

The word *horizontal* comes from the Greek term *horos*, meaning "a boundary." The word originated from the name describing the point where the sky appears to meet the earth. Horizontal lines are parallel to the horizon. Instead of reaching upward, horizontal lines reach to the left or right.

Mathematicians usually draw the base of any geometric figure parallel to the horizon. That makes it easier to find the altitude of the figure and gives the figure an appearance of stability.

Geographers use horizontal lines to measure the breadth of rivers, the distance between cities, and the span of bridges. These measurements reach outward rather than upward.



A closer look at many buildings reveals hundreds of horizontal lines.

Other examples of horizontal lines include the wingspan of birds, the surface of a pond, the foundation of a building, and the edge of a roof. Make a list of all the horizontal lines you can find in the course of a day. Find at least one horizontal line for every vertical line you were able to identify.

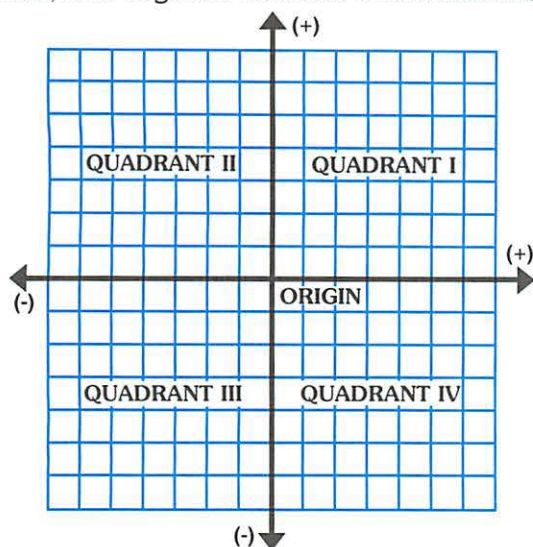
Horizontal lines reach outward to those who are around us.

3 The intersection of a vertical and a horizontal line defines a reference point by which values are measured.

When vertical and horizontal lines intersect, they form a cross. The center of that cross is a point to which mathematicians refer as the *origin*. It serves

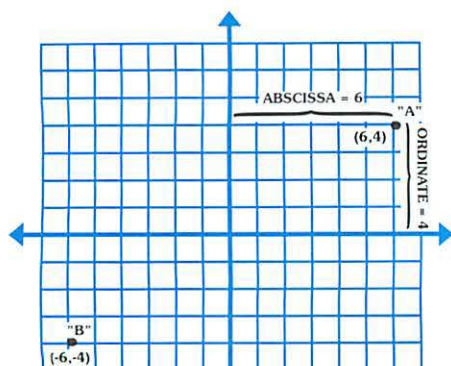
as a zero point from which all other values are referenced. Think of intersecting vertical and horizontal lines as intersecting number lines, with the origin as their zero point.

This intersection forms the quadrants of a graph. Positive numbers on the horizontal line are placed to the right, and negative numbers are counted to the left. Positive numbers on the vertical line go upward, and negative numbers move downward.



A graph is made up of two intersecting number lines, one vertical and the other horizontal. The center is called the *origin*. Quadrant I contains only positive numbers. Quadrant II represents positive numbers on the vertical line and negative numbers on the horizontal line. Quadrant III contains only negative numbers. Quadrant IV represents positive numbers on the horizontal line and negative numbers on the vertical line.

Mathematicians call the distance a point is located from the vertical line the *abscissa*. The word *abscissa* comes from the Latin term *abscissus*, which means "to cut off." The distance a point is located away from the horizontal axis is called the *ordinate*.



Mathematicians call the *abscissa* and the *ordinate* the *coordinates* of a point. The coordinates of point "A" are (6,4).

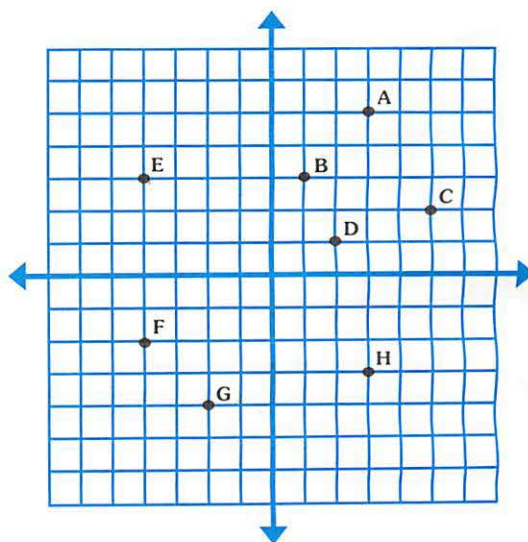
Mathematicians name points on a graph by listing both the *abscissa* and the *ordinate* values of a point. The *abscissa* is listed first, and the *ordinate* second. For example, consider point "A" on the preceding graph. It is 6 units to the right of the origin along the horizontal axis. That means its *abscissa* is 6. The same point is 4 units above the origin along the vertical axis. That makes its *ordinate* value equal to 4.

The coordinates of the point are written as (6,4). The *abscissa* value, 6, is always written first, and the *ordinate* value, 4, is always written second.

Point "B" on the graph is directly below the -6 on the horizontal axis and directly across from the -4 on the vertical axis. Its coordinates are written as (-6, -4). Finding the coordinates of a point allows mathematicians to name any location on the graph with accuracy and precision.

PRACTICE A

Locate the following points on the graph below by matching the letter of the correct point with its proper coordinates.



(1,3) D (3,5) A (-4,3) E (-2,-4) G
 (5,2) C (2,1) D (3,-3) H (-4,-2) F

The intersection of vertical and horizontal lines forms a cross, which determines the relationship of those who are oriented by its values.

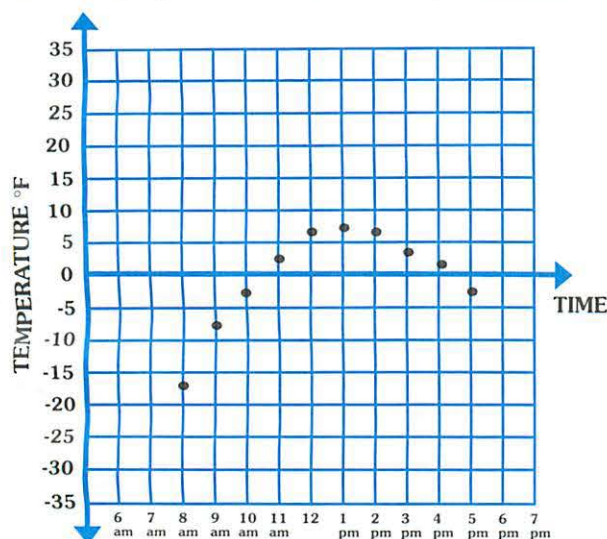
4 The values on horizontal and vertical lines demonstrate the domain and range of their relationship.

Mathematicians generally use the horizontal axis of a graph to represent independent variables and the vertical axis to represent dependent variables. An *independent variable* is simply any measurement which the researcher controls. The *dependent variable* is the one which the researcher cannot control.

For example, if a person makes a graph of how temperature changes during the day, he must record both time and temperature. He can control the times he reads the thermometer, but he cannot control the temperature. That makes *time* the independent variable and *temperature* the dependent variable.

Time, then, goes on the horizontal axis, and temperature goes on the vertical axis. Accordingly, time is reported first for each coordinate, and temperature is reported second.

TIME-TEMPERATURE GRAPH
January 1, 1989—Rhineland, Wisconsin



The record sheet for the above graph includes the following data for time and temperature: (8 a.m., -17°); (9 a.m., -8°); (10 a.m., -3°); (11 a.m., 2°); (12 noon, 6°); (1 p.m., 7°); (2 p.m., 6°); (3 p.m., 4°); (4 p.m., 2°); and (5 p.m., -2°).

Mathematicians refer to the values of an independent variable as the **domain**. These values are the numbers which appear on the horizontal axis of a graph. In the example above, the set of times the researcher reads the thermometer is the domain of the experiment. The domain in this case is the hours from eight in the morning until five in the afternoon.

If the study were to last for a week or even a year, the domain would be much larger. Whatever the case, the set of times that the researcher read the thermometer is called the domain of the study.

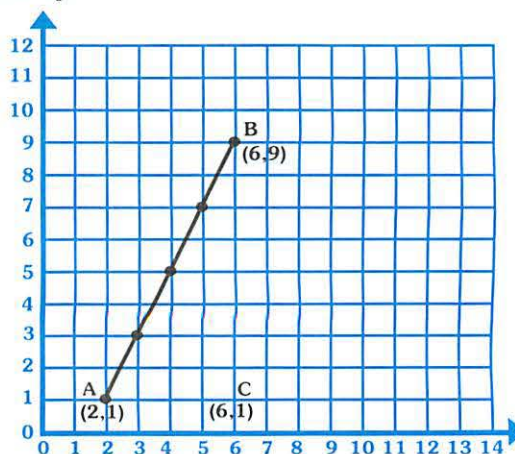
Likewise, mathematicians have a name for the dependent variable. They call it the **range**. In the example of time and temperature, the temperatures are the range. Obviously, the set of temperatures (the range) would be quite different if the readings were taken in July rather than in January.

Horizontal growth broadens our domain, while vertical growth extends our range.

5 Every line has both a vertical and a horizontal component.

As mathematicians plot a series of points on a graph, the points sometimes form straight lines. For example, the points (2,1), (3,3), (4,5), (5,7), and (6,9) all fall on the same straight line. Lines, like points, have both horizontal components and vertical components. In fact, any straight line can be broken down into these components and put back together again without altering any of its characteristics.

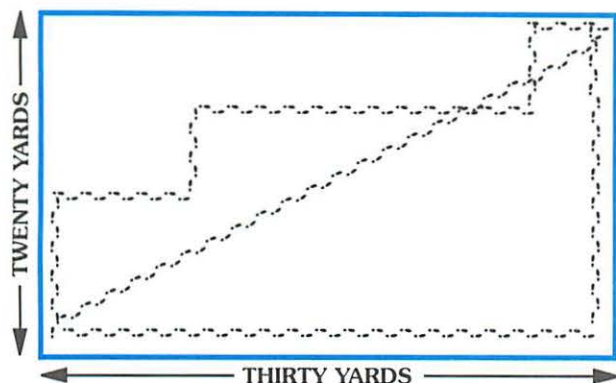
Consider \overline{AB} on the graph below. It is made up of a horizontal component \overline{AC} and a vertical component \overline{CB} . Point C is 4 units to the right of A on the horizontal axis. Point B is 8 units above C on the vertical axis. The horizontal component of \overline{AB} is 4, and the vertical component is 8. In other words, \overline{AB} simply extends 4 units to the right and 8 units up.



By moving 4 units to the right and 8 units up, \overline{AB} is formed.

In many respects, lines on a graph are like footprints in the snow which are left behind as we walk from one place to another. To get from one corner of a 20- × 30-foot vacant lot to the opposite corner, we could take a shortcut diagonally, or we could walk along one side of the lot to the corner, make a 90° turn, and then walk along the other side. Both routes cause us to reach the same point.

On the other hand, we could walk in a zig-zag pattern, pacing back and forth until we eventually arrived at the opposite corner. The net result is the same. Each east-west or north-south step is a component of the diagonal. However, the most direct route is always the shortest route.



Any path with the same components reaches the same point. The net result of each of the three paths is to walk 30 yards east and 20 yards north.

Every thought, word, and deed has both a vertical and a horizontal component which expresses a person's love for God and for others.

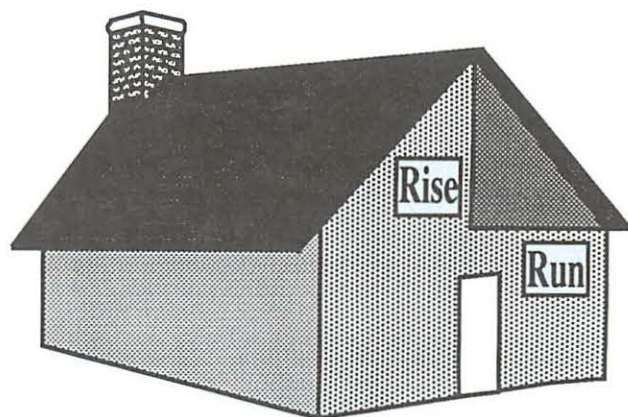
6 The slope of a line represents the relationship between its vertical and horizontal growth.

Mathematicians define the *slope* of a line as the change in the vertical component divided by the change in the horizontal component. To measure the slope of a line, a mathematician selects two points on the line and determines the difference between their horizontal components and their vertical components. The slope of the line is determined using the ratio of these two differences.

For example, consider a line which rises 6 units for every 3 units it moves to the right. Its vertical increase is 6, while its horizontal increase is 3. Thus, its slope is equal to 6 divided by 3 (2). In other

words, the line increases 2 units along the vertical axis for every 1 unit it increases along the horizontal axis.

The slope of a roof is determined the same way. If the roof spans 16 feet and has a rise of 8 feet from its lowest point to its peak, its change in horizontal span (run) is 16, and its change in vertical rise is 8. Because $8 \div 16 = \frac{1}{2}$, the roof has a slope of $\frac{1}{2}$.

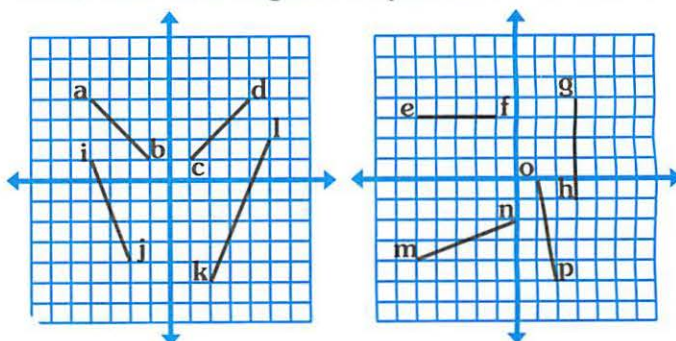


The slope of a roof is the ratio of its rise divided by its run.

Some lines, however, have negative slopes. They increase in one direction but decrease in the other. Consider a line which begins at a point (5,7) and ends at a point (10,2). Its horizontal component increases by 5, and its vertical component decreases by 5. The slope is -1 because $-5 \div 5 = -1$. That means that the line drops 1 unit for every unit it moves to the right.

PRACTICE B

Calculate the slopes of the following lines. Which lines have positive slopes? _____ Which lines have negative slopes? _____



A line that "grows" upward at the same rate it "grows" outward exhibits a perfect "oneness" of slope.

How do two special lines reveal the extremes of love?

Vertical and horizontal lines reveal two special kinds of slope. A horizontal line, for example, has no rise as it moves to the right. Therefore, its slope is zero. It illustrates what James describes as works without faith.

On the other hand, vertical lines have rise without any span. They illustrate faith without works. Calculating the slope of vertical lines requires dividing by zero. In mathematics that is impossible, resulting in an "undefined" answer. Thus, the slope of a vertical line is simply undefined.

A horizontal line might also illustrate a person who loves others, yet ignores God. Because there is no vertical relationship in such a person's life, his love is nothing but filthy rags. His "slope" is zero. A vertical line, then, would illustrate a person who loves God but fails to demonstrate that love by loving others. He is dead, or "undefined."

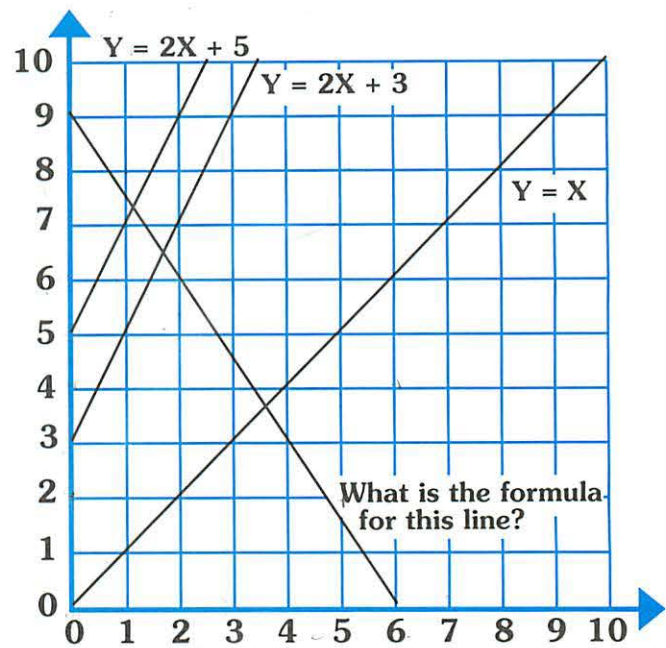
"Yea, a man may say, Thou hast faith, and I have works: shew me thy faith without thy works, and I will shew thee my faith by my works" (James 2:18).

7 The formula for a line can be expressed in terms of its slope and its intercept.

Mathematicians use a formula to define the characteristics of a straight line. They call it the **slope intercept** formula. It is written as $y = mx + b$. In this formula, y is the vertical position of any point on the line; x is the corresponding horizontal position of any point on the line; m is the slope of the line; and b is the point at which the line intersects the vertical axis.

Knowing simply the slope of a line and the point it crosses the vertical axis is enough to describe any line. For example, consider a line which has a slope of 1 and crosses the vertical axis at the origin. Mathematicians write the formula for such a line as $y = 1x + 0$. Written more simply, the formula becomes $y = x$.

All lines have their own unique formulas. A line with a slope of 2 that crosses the vertical axis at 5 has a formula written as $y = 2x + 5$. A line with a slope of -3 that crosses the vertical axis at -4 has a formula written as $y = -3x + (-4)$. No other line has that particular formula.



Slope defines the direction of a line, and **intercept** marks the point at which the line crosses the "y" axis.

Now suppose that you know the formula of a line and want to draw that line on a graph. The formula $y = 2x + 3$ indicates that the line has a slope of 2 and that it crosses the vertical axis at 3. To draw the line, begin at point $(0, 3)$, and go up 2 units for every 1 unit you move to the right.

PRACTICE C

Write the formulas for the following lines.

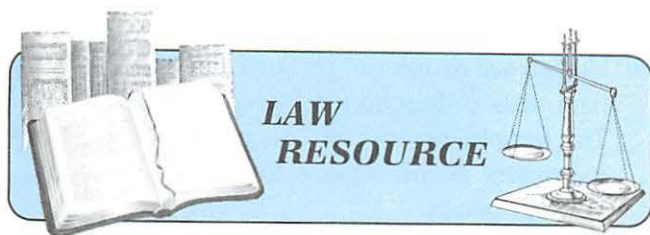
| SLOPE | INTERCEPT | FORMULA |
|---------------|-----------|---------------------------|
| 1 | 6 | $y = x + 6$ |
| 5 | 2 | $y = 5x + 2$ |
| $\frac{1}{2}$ | -3 | $y = \frac{1}{2}x + (-3)$ |
| -2 | 0 | $y = -2x + 0$ |

Indicate the slope and intercept derived from each formula.

| | | |
|----------------|----------------|------------------------|
| $\frac{3}{0}$ | $\frac{-4}{3}$ | $y = 3x - 4$ |
| $\frac{-1}{7}$ | $\frac{0}{4}$ | $y = 0x + 3$ |
| | | $y = -x$ |
| | | $y = \frac{1}{3}x + 4$ |

The direction of a person's life can be expressed in terms of the growing relationship with God and the maturing love for others which has followed his salvation.

Date completed _____ Evaluation _____



LAW RESOURCE

HOW DOES A NATION'S ECONOMY DESTABILIZE WHEN IT FAILS TO FOLLOW THE LAW OF LOVE?



Decreasing the value of money is a form of theft and, therefore, violates the law of love. Counterfeiting money is one form of decreasing its value. Can you tell which of the above bills is a counterfeit?

During the conquest of the Promised Land, in keeping with Moses' command, Joshua assembled half of the nation of Israel on the slope of Mount Ebal and the other half on the slope of Mount Gerizim. He stood between them and read all the blessings and cursings of the Law. As each curse was read, the host on Mount Ebal would solemnly call out, "Amen!" (See Deuteronomy 27:11–26 and Joshua 8:30–35.)



Picture: Palestine, Colonel Wilson, D. Appleton & Company

What a spectacular event it must have been as a third of a million people on Mount Gerizim (pictured above) and a third of a million people on nearby Mount Ebal affirmed the Law to each other!

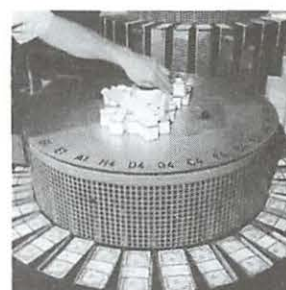
The people must have been impressed that day by the realization that half of the fifty curses affected the economy of their nation. (See Deuteronomy 28.)

The implications for the economic stability of other nations is equally clear. If God's law of love is violated, economic domination by other countries will occur, as stated in the Law: "*The stranger that is within thee shall get up above thee very high; and thou shalt come down very low. He shall lend to thee, and thou shalt not lend to him: he shall be the head, and thou shalt be the tail*" (Deuteronomy 28:43–44).

Inflation is a major factor in the stability of an economy. It robs money of its value. A bag of groceries which cost \$10 in 1967 costs about \$35 in today's money.



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When the Bureau of Engraving and Printing fails to follow the law of just weights and measures, a subtle form of theft takes place.

An essential aspect of economic stability is the requirement to deal justly in business practices. Each practice grows out of doing to others as we would have them do unto us according to the Law and the Prophets. One of these practices is the use of just weights and measures.

THE WEIGHTS AND MEASURES OF LOVE

The Old Testament Law commanded a man not to have two differing weights in his bag. It was a common practice in those days for a dishonest merchant to use a lighter weight when he was selling to a customer and a heavier weight for making his own purchases.

This was considered a direct violation of the commandment against stealing—so was using an inaccurate scale to cheat someone. God's Word declared such a double standard to be an abomination to the Lord. Just weights and measures, on the other hand, were said to be His delight. (See Deuteronomy 25:13–16; Proverbs 11:1; 20:10; and Ezekiel 45:10.)

Dishonest buyers and sellers discovered that it was possible to steal from each other by tampering with weights and measures in ways that very few individuals would detect. Soon rulers began to use similar methods to cheat their subjects. The same practice continues today in three major ways:

1 Producing money not backed by silver or gold violates the law of love.

Today we have become so accustomed to using only government-issued currency that we assume there is no other way for an economy to operate.

From a Scriptural perspective, the proper function of civil government is simply to enforce God's law of just weights and measures, not to mint money and artificially control its value. In other words, the state's responsibility is to prosecute those who would steal from others by using false weights, rigged scales, or other dishonest forms of trade.

A dishonest silversmith could strike a coin that was supposed to be pure silver, using a mixture of 90 percent silver and 10 percent alloy. Because the alloy was less valuable than silver, he increased his profit. If a government failed to enforce standards, then all the other silversmiths would either begin doing the same thing or be forced out of business.

When the state took control of currency, its officials often succumbed to the same temptation. They found that by debasing the coins, they had more money to spend without raising taxes. The people could be robbed in this way without being aware of what was happening.

When people finally realize that two kinds of coins (for example, some of pure silver and the others of half silver) are circulating, several consequences occur. Even though the government considers the two types of coins to be of equal value, people begin hoarding the silver coins.

Because the coins left in circulation have only 50 percent as much precious metal, the merchant theoretically has three distinct choices:

- (1) He can continue selling the same product for the same price, realizing he will get only half as much silver.
- (2) He can double his price for the same item in order to bring in the same amount of silver as before.

- (3) He can sell an inferior product at the same price he formerly charged for the higher quality item. The temptation is to do this in such a way that customers do not realize that they are getting cheaper goods.

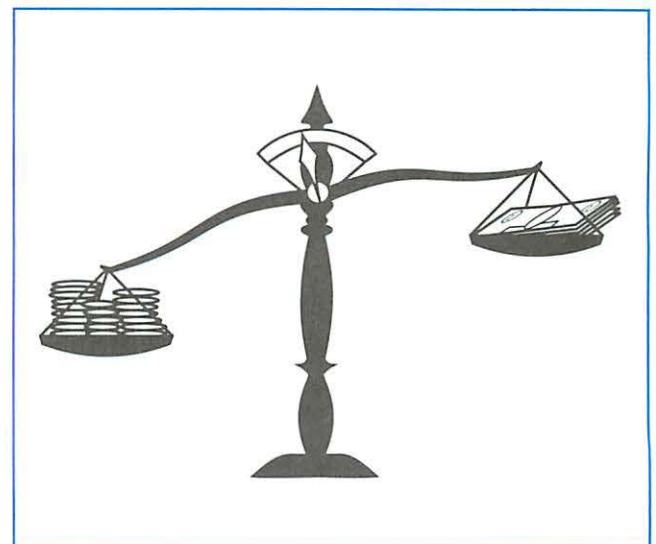
What happens in reality when a currency is debased is that prices (and wages) tend to go up and quality (and productivity) tends to go down. This process is known as *inflation*.

Isaiah 1:22–23 clearly establishes the relationship between debasing currency and theft: *“Thy silver is become dross, thy wine mixed with water: Thy princes are rebellious, and companions of thieves . . . they judge not the fatherless, neither doth the cause of the widow come unto them”* (Isaiah 1:22–23).

In the 1960s legislation was passed by the U. S. Congress to remove the last vestiges of silver from American coins. Now dimes, quarters, and half-dollars are plated with a silver-colored metal but contain no silver.

2 Increasing the money supply without backing violates the law of love.

Paper currency (notes or certificates) has value only to the degree that it is backed by precious metal. Such currency was issued first by banks and then later by governments. Both institutions quickly learned that once the public has confidence in their notes, it is a simple matter to print and issue more certificates than could actually be redeemed in silver or gold.



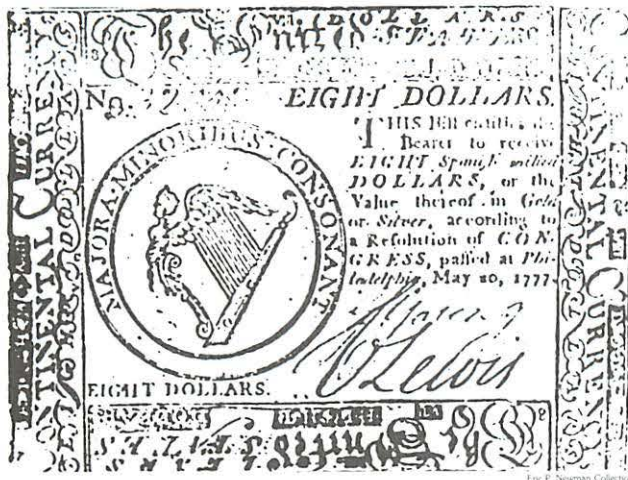
Paper currency is supposed to be “backed,” or secured, by gold or silver.

Again, increasing the money supply without a corresponding increase in goods and services in the economy sets in motion an inflationary spiral which drives prices and wages ever higher. People generally have more money to spend but discover that it buys less and less of what they need.

Paper money was first used in America during the Colonial period. Metal money was in short supply, so nearly all of the colonies issued paper currency at one time or another. About a decade before the beginning of the Revolutionary War, Parliament banned the notes. The colonists' resentment of this action helped to fuel their desire to be free of British control.

In order to finance the war, the Continental Congress decided in 1775 to issue notes which the colonies promised to redeem four years later in Spanish dollars (one of the most common coins in use at the time). The new money was declared to be legal tender in all thirteen colonies, and at first it was accepted at face value without any problem.

However, as the war dragged on, Congress had to issue more and more "continentals," as the new currency was called. The inevitable result was rampant inflation, and the currency depreciated rapidly. By 1779 around \$241 million had been put into circulation, and one paper dollar was worth only about three cents.



The British shrewdly sought to weaken the American war effort by counterfeiting thousands of continentals. The note shown is a fake eight-dollar bill. It promised the bearer Spanish dollars or the equivalent in gold or silver.

Finally, Congress stopped printing the money, and the states no longer recognized it as legal tender. Many people lost their life savings or their entire fortunes because of the severe inflation.

The economic chaos might well have caused the United States to lose the war had it not been for millions of dollars in loans received from France, Spain, and Holland. Much of this money came in the form of gold and silver coins, which gave the economy more solid footing. Consequently, the coins people had been hiding returned to circulation as well.

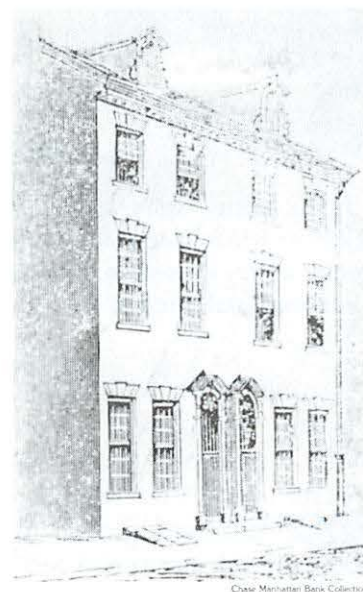
Under the new nation's Articles of Confederation, several of the states continued to mint coins and to issue paper money, some of which was not backed by coins. Many Spanish coins remained in circulation, but often the same coins had different values in various areas of the country.

The Constitution included a degree of federal control over the nation's monetary system which the Founding Fathers hoped would resolve the confusion of the 1780s.

U. S. Constitution, Article I

Section 8: "The Congress shall have power . . . To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures; To provide for the punishment of counterfeiting the securities and current coin of the United States. . . ."

Section 10: "No state shall . . . coin money; emit bills of credit [paper currency]; make anything but gold and silver coin a [legal] tender in payment of debts. . . ."



The first U. S. Mint was housed in this building in Philadelphia. Its operations in the early years were hampered by a lack of funding and skilled personnel.

The national mint was established in 1792 but was unable to produce enough coins to meet the demand. Most of the coins issued went directly into bank vaults to secure paper money. Although the *states* were constitutionally prohibited from issuing currency, the *banks* were not.

State-chartered banks multiplied rapidly in the early years of the nineteenth century. They gradually began supplying more and more currency which was not backed by gold or silver. "Bills of credit," as these bank notes were called, began to lose their value, and virtually all coins disappeared from circulation.

Government spending during the War of 1812 made inflation even worse. Finally, very few banks were able to redeem paper currency with coins. As a result, many banks failed. The establishment of the Second Bank of the United States and another infusion of European capital allowed the country to regain economic stability.

This basic cycle was repeated several times in the next few decades, often resulting in recessions or depressions such as the Panic of 1837.



This was the scene outside a New York bank in the Panic of 1837 as fearful depositors hurried to withdraw their money. By this time the financial crisis had taken on an international dimension.

When the War Between the States broke out, an abundant supply of gold and silver coinage was circulating, but it was quickly driven out of circulation because banks began refusing to redeem any notes in coin. Then in order to finance their military operations, both the North and the South issued paper money.

This was the first time since the Revolutionary War that the United States had resorted to issuing

paper money. The new dollars, which were called "greenbacks" because of the color of ink used on the reverse side, were backed not by gold or silver but only by the government's promise to make them good.



Chase Manhattan Bank Collection

The scarcity of coins during the Civil War forced the government to issue fractional currency: paper money with values of three, five, ten, fifteen, and twenty-five cents.

A total of about \$450 million in greenbacks was issued. This currency eventually depreciated to the point at which one dollar was worth only thirty-five cents. As the Union began to win military victories, the greenbacks' value rose, but it was a full fourteen years after the war before greenbacks returned to their original face value.

The issuance of greenbacks was declared unconstitutional by the Supreme Court in 1870 on the grounds that the Constitution allowed the federal government to *coin* money but not to *print* it. The following year, however, the Court reversed its decision (*Hepburn v. Griswold* and *Legal Tender Cases*).

It was during the Civil War that the term *inflation* was used for the first time in describing what was happening to the purchasing power of money. Inflation was even worse in the South than in the North as Confederate paper money soon came to be entirely worthless. In contrast, people on the West Coast continued to use gold and silver coins during the war. They refused to accept the greenbacks, and by comparison prices in that region remained stable.



During the war, Californians avoided inflation by refusing to use greenbacks and retaining gold currency. They were able to do this because gold was relatively more abundant in the West. This drawing depicts the Bank of California offices in San Francisco.

Following the war, a gold-versus-silver controversy erupted which would last well into the twentieth century. The Democratic party generally favored free coinage of silver. This would result in a more plentiful money supply and, thus, bring about inflation. Most Republicans, on the other hand, supported a strict gold standard to keep prices from rising. There was also a Greenback party, consisting of those who wanted to keep an abundance of paper money in circulation.

In 1853 all silver coins except the silver dollar were devalued by reducing their silver content. This action had, in effect, placed the nation on a gold standard, but few people realized it.

The Coinage Act of 1873 instated the gold coin standard by stipulating that no more silver dollars would be minted. This action outraged the silverites (as those who favored silver coins were called), and they managed to exert enough pressure to motivate Congress to resume issuing that coin in 1878. It was only a partial victory, however, because the declining price of silver meant that these coins were now worth more as coins than as bullion.

Because many people, especially in the North, disliked the large, heavy silver dollars, the government began issuing "silver certificates." This currency, which could be redeemed for silver, remained an important part of the monetary system for nearly a century afterward.

The conflict over gold and silver was a major factor in the Panic of 1893 and the next two presidential elections.



In 1896 and 1900, William Jennings Bryan campaigned unsuccessfully for the Presidency on a "free silver" platform. He advocated the unlimited coinage of silver.

The political dispute was finally settled in 1900 when Congress passed the Gold Standard Act. This legislation did not remove silver or silver certificates from the system but simply made the gold dollar the "standard unit of value."

Many new gold coins were minted, and paper money backed by gold (called "gold certificates") was issued. Although these gold coins never circulated to any great extent, their importance as the basis for domestic currency and international trade cannot be denied.

In 1913 Congress authorized the establishment of the Federal Reserve System. This privately controlled central banking organization was intended to make currency more flexible and responsive to the economic needs of the nation.



The nation was divided into a dozen districts, each served by a Federal Reserve Bank. This map shows the cities where the banks and their branch offices are located.

One of the most significant powers granted to “the Fed” was the authority to issue large amounts of paper money called *Federal Reserve Notes*. These notes could not be redeemed in gold or silver.

When the 1929 stock market crash triggered the Great Depression, people lost all confidence in paper currency and began asking for payment in gold. Thousands of banks were unable to meet the sudden demand and collapsed. People naturally began hoarding gold.

Immediately upon taking office in 1933, President Franklin Roosevelt declared all banks closed temporarily. During this time, Congress passed legislation requiring Americans to exchange all their gold coins, gold bullion, and gold certificates for other currencies. For the next forty years it would be illegal for private citizens to own or trade gold.



President Roosevelt confers with advisers about taking the nation off the gold standard.

About a month later the President announced that the United States was abandoning the gold standard. He devalued the gold dollar to approximately fifty-nine cents. The intent was to bring about inflation deliberately in order to stimulate the economy. This strategy was only marginally successful. What really cured the economic malaise of the 1930s was World War II.

From 1934 until 1968 two kinds of paper currency were in circulation in the United States: silver certificates (backed by silver) and Federal Reserve Notes (backed only by the government’s promise). On June 24, 1968, silver was demonetized as gold had been in 1934. After that day silver certificates could no longer be redeemed for silver at the U. S. Treasury.

Even after the United States went off the gold standard at home, gold continued to be used for world trade. The dollar tied to gold at a fixed price in the international market provided a stable basis for the worldwide economy. This arrangement worked well until the United States began deliberately to debase (inflate) its own currency.

In 1968 the United States and several European countries agreed to “freeze” their existing gold holdings in order to prevent the depletion of these reserves. Then in 1971, when the U. S. gold reserves had fallen from their 1947 high of \$24 billion to under \$10 billion, President Nixon severed the dollar’s last tenuous link with gold.

For the first time in 1,500 years international currency was no longer linked to gold. The dollar itself without any reference to precious metals was thereafter to be the standard for international dealings. In the years following this action, the world suffered the worst inflation of this century.

The clear lesson emerging from this brief historical overview of how coins and currency have functioned in the American economy is that paper money, unless it is fully backed by precious metals, inevitably declines in value. When a government allows and even deliberately induces inflation, it is stealing from its own citizens.

As one economist observed, “To issue a piece of paper that serves as an IOU for precious metals without having 100% of the promised metal in reserve is fraudulent. It is theft. It is a form of tampering with weights and measures.”



John Maynard Keynes

“By a process of inflation governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens. There is no subtler, no surer means of overturning the existing basis of society, than to debase the currency. The process

[of inflation] engages all the hidden forces of economic law on the side of destruction, and does it in a manner that not one man in a million is able to diagnose.”

3 Lending money with only fractional reserve violates the law of love.

The fractional reserve method of banking works in this way: A person who has some money which he does not need right away deposits it in a bank. The bank promises to take care of his money and even to pay him some interest on it. The depositor has the right to come in and withdraw his money whenever he desires to do so, or he can write checks on it, allowing other people to withdraw specified amounts of his money.

The bank, however, does not just put the money deposited into the vault and wait until the depositor or one of his creditors comes to ask for it.



Most of the money a person deposits in a savings or checking account does not stay in the bank. It goes out in the form of a loan to someone else.

The banker keeps a certain percentage of the deposit on hand as a **reserve**, and the rest he loans to someone who needs cash. The borrower promises to repay the money plus interest within a certain time period.

If the depositor comes in and asks for his money before the one who has borrowed has paid back the loan, the banker will have to use money from other depositors in order to pay him. Obviously, the bank will not be able to pay everyone if too many depositors want their money on the same day. This event is known as a **bank run**. Similarly, if a large borrower defaults on his loan, depositors lose money.

One of the responsibilities of the Federal Reserve System is to determine what percentage of the deposit a member bank must keep in reserve. By raising and lowering the required percentage, "the Fed" can decrease or increase the money

supply. This control over the economy was designed to enable the government to head off the financial panics which were so frequent during the 1800s.



This bank president had to inform concerned depositors that the bank was closing its doors. In spite of the Federal Reserve System, bank runs in the early 1930s caused many banks to fail.

It is important to realize, however, that the phrase "increase in the money supply" is synonymous with "deliberate inflation." The way fractional reserve lending produces this situation can be illustrated by the following table:

| Bank Number | Amount Deposited | Amount Loaned | Amount in Reserve |
|-------------|------------------|---------------|-------------------|
| 1 | 200.00 | 180.00 | 20.00 |
| 2 | 180.00 | 162.00 | 18.00 |
| 3 | 162.00 | 145.80 | 16.20 |
| 4 | 145.80 | 131.22 | 14.58 |
| 5 | 131.22 | 118.10 | 13.12 |
| 6 | 118.10 | 106.29 | 11.81 |
| Totals | 937.12 | 843.41 | 93.71 |

If a person deposits \$200 in the first bank, the banker will send 10 percent (or the percentage "the Fed" requires from that bank for that type of account) to his regional Federal Reserve Bank. He will loan the remaining \$180 to a borrower, who, in turn, deposits it in his account at the second bank. Again "the Fed" holds 10 percent, and that bank can lend the rest.

After the process has been repeated a few more times, the original deposit of \$200 has become nearly \$850 of loaned money. The Federal Reserve System calls it the "multiplying capacity of reserve money." Actually, the reserve requirement for most accounts is far below the 10 percent in the example.

Thus, the government inflates the money supply by debasing the coinage and printing unsecured paper currency, and the banks produce inflation by fractional reserve lending, with the endorsement of the government. Such procedures are contrary to Scripture because they are a form of tampering with the scales. They are like dishonest weights and fraudulent measures.

The main reason the government is willing to tolerate (and even institutionalize) these unethical procedures is that “the Fed” is able to supply the bureaucracy with more money to spend without increasing taxes. Fractional reserve banking is one factor which makes it possible for the government to continue to engage in deficit spending year after year.

One of the keys to understanding the true meaning of the Golden Rule is seeing that the opposite of love is not hatred but selfishness. The greed and lack of self-discipline which have undermined our banking system—and our entire economy—can be traced to the root problem of a temporal value system in the lives of individuals.

One consequence of these temporal values is that many of the economic curses of Deuteronomy 28 are now coming to pass. As the people of the United States have lost respect for the Law and the Prophets upon which the Golden Rule is based, we have debased our coins, abandoned the precious metals as the foundation for the economy, and capitulated to fractional reserve banking.

As a result, today’s American economy, based no longer on real money but on debt and deception, is plagued with instability.

“There is, after all, very little difference between the debasement of our currency through the adulteration of the money supply and the larger debasement of our moral currency through unbridled greed, irresponsible living, and the adulteration of human relationships and ethical standards.



Warren T. Brookes

“It seems no coincidence that the motto ‘In God We Trust’ was struck on our national coins. It is a fitting reminder that our currency is worth no more than our fundamental sense of trust and faith, a faith based on the higher set of moral

PROJECT 1

Analyze this 1978 editorial cartoon:



Why did “Lefty” change the price of the car? Is the Chevy likely to sell now? Why or why not? What do you think the cartoonist is trying to say?

PROJECT 2

Study Deuteronomy 28. Then list the consequences of disobeying God’s laws. Identify those which are financial or economic in nature, and determine which of them are related to the following aspects of economic instability:

- Federal deficit and consumer debt
- Decreased productivity
- Foreign ownership of U. S. real estate, businesses, etc.
- Unfavorable balance of trade

Date completed _____ Evaluation _____

laws that underlies our Constitution and its Bill of Rights. It was Moses who argued that such moral laws are the only sure guide to the promised land of milk and honey (economic well-being) and that ethical principles, strictly adhered to, are the only substantial ‘currency’ any nation would ever need.

“Is it not inevitable that a nation whose human and moral values are declining will soon find its currency losing value, too? Does it not seem logical that financial devaluation is merely the outgrowth of ethical and moral devaluation? Ultimately, it takes the same kind of self-discipline to preserve the value of a nation’s currency as it does to preserve the ethical value of human life itself.”



MEDICINE RESOURCE

HOW DO SPINAL REFLEXES ILLUSTRATE GOD'S DESIGN FOR PERFECT LOVE?



Damon Burton

People who band together to help those who are injured may or may not exhibit perfect love. Those who love in order to be loved in return miss the point of perfect love.

It began quite suddenly and without warning. At first, there was merely a low rumbling noise. Then the ground shook slightly. People on the sidewalks staggered from side to side. Within seconds, bricks and glass began falling with mighty crashes as if the sky were caving in. Trees swayed, but no wind rustled their leaves. Cars bounced off the ground like skiers flying over moguls.

As the quake reached its peak, the earth simply opened up, creating giant cracks everywhere. Roads, buildings, homes, and parking lots seemed to come apart at their seams. Dust rose out of nowhere in huge, billowing clouds. Then all was silent.

For a moment, time seemed to stand still. People stood like statues, looking at one another in

bewilderment, not realizing the full extent of what had happened. Soon, the faint whine of distant sirens brought some people back to their senses.

Without taking thought for their own safety or asking for any recompense, those who could walk rushed to the aid of those who could not. It made no difference who was rich or poor, black or white, male or female. Teams of people who did not even know one another's names or the names of those they comforted banded together to help those who were injured or trapped.

The events happened so fast that hours went by without anyone feeling hunger or fatigue, or speaking harsh words. Everyone thought not of himself, but only of the needs of others. For at least one evening and well into the night, strangers loved one another as they loved themselves.

The following morning as the rising sun revealed the devastation rent by the quake, strangers saw one another in a new light. Bound together by a common sacrifice, they had witnessed for a brief moment a demonstration of brotherly love.

However, as morning gave way to a blistering afternoon, some individuals returned to their old ways. Department stores were pillaged and looted. Angry arguments erupted over exorbitant price-gouging for repairs. Love quickly faded into a mere memory as competition for each one's own interests took center stage.

Learn how spinal reflexes illustrate the nature of perfect love.

"A new commandment I give unto you, That ye love one another; as I have loved you, that ye also love one another. By this shall all men know that ye are my disciples, if ye have love one to another" (John 13:34-35).

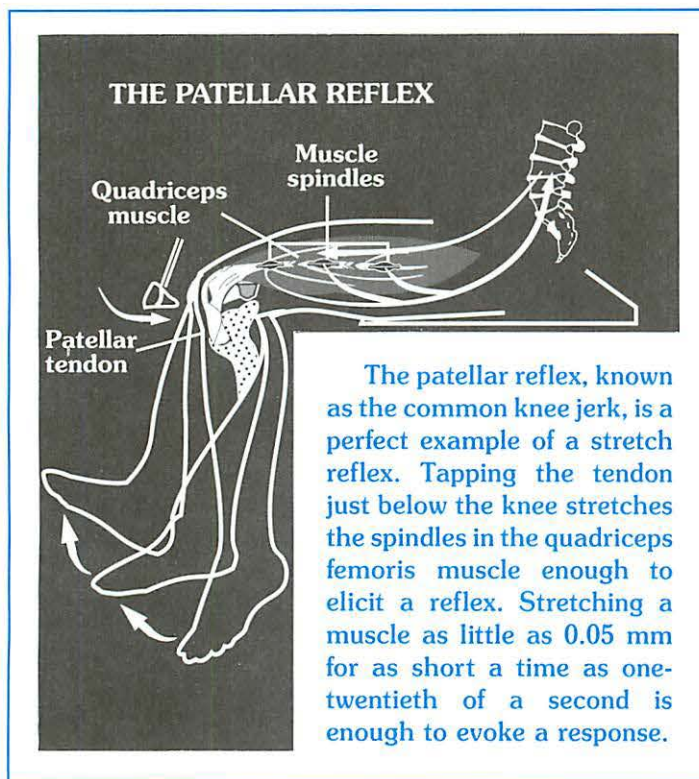
1 REFLEXES ARE AUTOMATIC, REACTING TO NEEDS WITHOUT DELIBERATION.

The basic unit producing action in a person's body is a bundle of muscle fibers called a *motor unit*. Motor units vary in size from just a few fibers, as in the delicate muscles of the eye, to several hundred fibers, as are present in the large muscles of the leg. Each motor unit averages about 150 fibers.

These fibers contract in response to commands from motor nerves. Most motor nerves are, in turn, controlled by the higher centers of the brain.

However, many actions never reach the brain. They are the result of reflexes which work automatically without conscious thought or supervision.

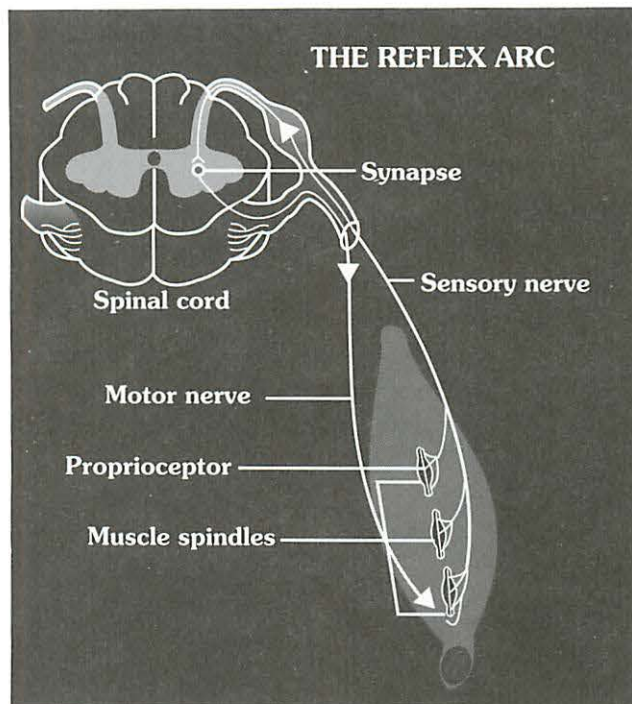
One of the simplest types of reflexes is the **stretch reflex**. Tiny sensors called *spindles* are embedded within every motor unit. Whenever a muscle stretches, the spindles stretch, too, separating the individual spindle cells. The separation of these spindle cells triggers electrical impulses which travel along sensory nerves to the spinal cord. However, instead of following the spinal cord to the brain for conscious direction, the impulse returns directly to the stretched muscle, causing it to jerk abruptly.



The **patellar reflex** involves only two neurons: a neuron which carries stretch impulses to the spinal cord and a motor neuron which carries the “jerk” reflex back to the leg. The whole action is automatic. In fact, a person could not stop it even if he wanted to do so.

Every motor unit in the body exhibits this same kind of involuntary reflex. Tapping the Achilles tendon along the back of the ankle causes the foot to jerk. Tapping the back of the elbow causes the arm to jerk. Tapping the back of the wrist causes individual fingers to jump. Even the heart exhibits a stretch reflex. Most muscles, however, are too small or too deep to be tested with a physician’s rubber mallet.

The stretch reflex, wherever it is exhibited, always has five basic components. The reflex begins with the tiny spindle which measures the stretch in a muscle. Physicians call these spindles *proprioceptors* (PRO-pree-oh-sep-terz). This term comes from two Latin parts: *proprius*, meaning “one’s own,” and *capio*, meaning “to take.” A proprioceptor is a nerve that literally allows the body to monitor itself.



A reflex arc includes a proprioceptor, a sensory nerve, a synapse, a motor nerve, and a muscle.

The second component of the stretch reflex is the sensory nerve. Physicians also call this nerve an *afferent* (AFF-fuh-rent) nerve. It carries impulses from the proprioceptors to the spinal cord. When the impulse reaches the spinal cord, it jumps across a tiny gap called a *synapse* (SIH-naps). Synapses are the third component of the stretch reflex. They separate the incoming afferent nerve from the outgoing motor nerve.

If the incoming sensory impulse fails to jump the synapse, there is no reflex. The impulse simply reaches a dead end and stops. However, under normal circumstances the impulse automatically traverses the synapse and returns to the same motor unit from which it started.

The returning impulse travels along a fourth component of the reflex called the *motor nerve* or *efferent* (EFF-fuh-rent) nerve. Efferent nerves carry impulses away from the spinal cord toward motor units.

When the impulse arrives at a motor unit, it triggers all the fibers in that unit to contract simultaneously. Physicians call the affected motor unit an *effector*. It converts the reflex impulse into an action. Together, these five components form a *reflex arc* which receives and acts on information without a person's needing to think about it.

The word *affect* spelled with an *a* is a verb meaning "to influence." The word *effect* spelled with an *e* is a noun referring to "a result." In other words, an *affect* produces an *effect*.

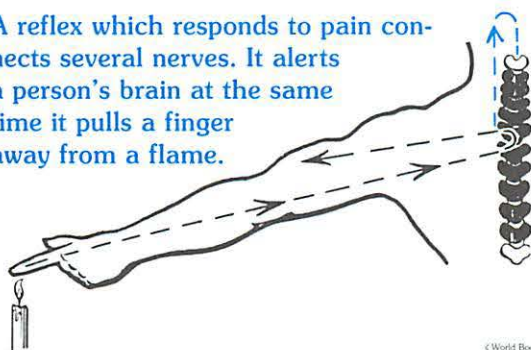
In the case of the reflex arc, the effector is a muscle that converts an affect into an action. Because both the sensory impulse and the motor impulse of a reflex arc are on the same side of the body, the arc is called an *ipsilateral reflex arc*. The term *ipsilateral* comes from the Latin words *ipse*, meaning "same," and *latus*, meaning "side."

Perfect love serves others automatically without fear of sacrifice or desire for reward.

2 REFLEXES ARE IMMEDIATE, RESPONDING TO NEEDS WITHOUT DELAY.

With nerve impulses traveling to and from the spinal cord at speeds of up to two hundred miles per hour, it takes only a fraction of a second for the stretch reflex to respond to a tap on the knee. Other reflexes, however, are not quite as simple. Many reflexes travel across several synapses before returning to their points of origin.

A reflex which responds to pain connects several nerves. It alerts a person's brain at the same time it pulls a finger away from a flame.



The *flexor reflex*, for example, responds to receptors that monitor pain. Impulses from a burned finger or stubbed toe travel on afferent nerves to the spinal cord, where they intersect a second nerve called an *interneuron*. This intersection slows the

reflex and allows the impulse to branch off in other directions. One branch carries the pain message to the brain for interpretation while other branches carry the message to members of the body.

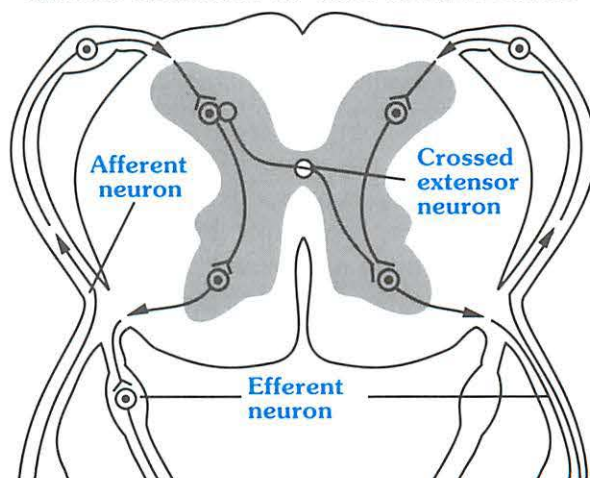
The incoming impulse must then jump across a second synapse in order to reach an efferent motor nerve. The efferent nerve carries the message back to the appropriate muscle, telling it to withdraw the injured member.

While the additional synapses and the interneuron intersection require extra time, the reflex still returns to the injured member before the message of pain ever reaches the brain. Researchers have documented that we actually react to pain before we feel it. The flexor reflex protects the members of the body before the person knows he has been hurt. By responding immediately to a painful situation, reflexes greatly reduce the potential for injury.

Like the stretch reflex, the flexor reflex is also an ipsilateral reflex. That is to say, the receptor and effector are on the same side of the body. However, the additional interneuron and extra synapse of the flexor reflex allow it to connect with nerves on the opposite side of the body. This is called a *crossed extensor reflex*.

While motor units are withdrawing one member from a painful stimulus on one side of the body, branching nerves direct motor units on the opposite side of the body to reach out. In other words, whenever a flexor reflex draws one member back, it extends a member on the other side at the same instant. This helps a person maintain his balance.

CROSS SECTION OF THE SPINAL CORD



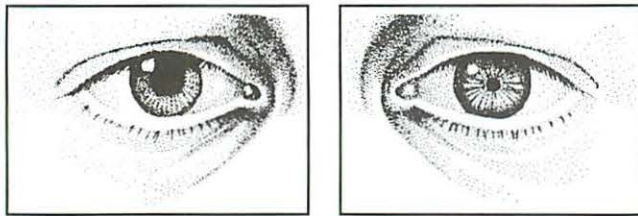
Perfect love responds immediately to urgent needs.

3 REFLEXES ARE SENSITIVE, CAREFULLY MONITORING CHANGING CONDITIONS.

Reflex receptors monitor a variety of conditions. *Stedman's Medical Dictionary* lists well over two hundred different reflexes. Each one responds to its own specific set of needs both inside and outside the body. Whenever a receptor identifies a change, it triggers nerve impulses which alert members of the body so they can respond appropriately.

For example, the **accommodation reflex** measures the amount of light coming into the eye. It constricts the pupil in bright light and opens it in dim light. The same reflex also responds to distance by automatically increasing the convexity of the lens for close objects and flattening the lens for distant objects.

The **corneal reflex** responds to sensitive receptors embedded in the cornea. These receptors are so alert to touch that they can respond to the brush of a tiny hair. The reflex triggers effectors which cause the eyelid to blink instantaneously.



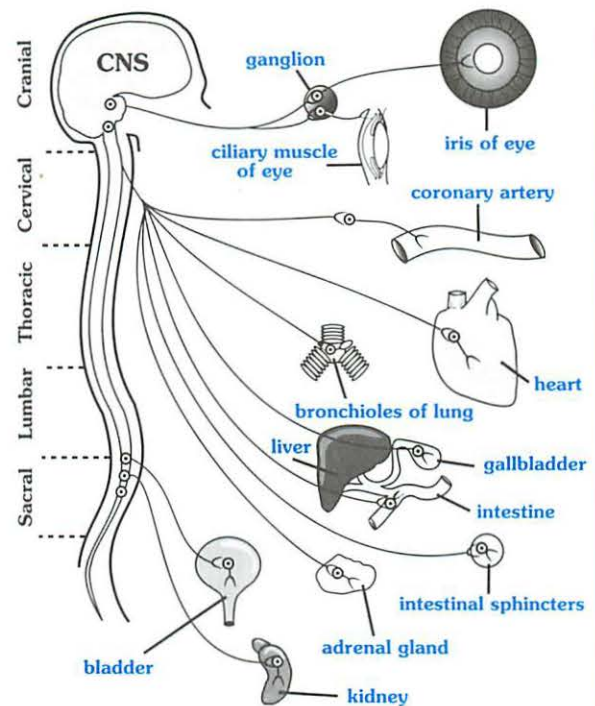
The pupils of the eyes dilate automatically in dim light and constrict to pinhole size in bright light. The eyes are also sensitive to many irritants. Reflexes carefully monitor changing conditions such as dryness, temperature, touch, pressure, and chemical irritants. Receptors in the conjunctiva (the membrane surrounding the eye) stimulate tears in response to many different needs.

The **cough reflex** responds to chemical receptors which monitor pollutants in the air. When quickened, the cough reflex sends out messages to several members. Together they produce a sudden burst of air which helps to clear the respiratory passages.

The **pilomotor reflex** produces "goose bumps" whenever receptors "notice" that skin temperature is falling. The goose bumps are the result of the *arrectores pilorum* muscles which contract around the base of each hair. As these muscles tighten into "bumps," they lift the hairs, increasing their insulating value and producing enough metabolic heat to warm the skin.

Even the diameters of blood vessels are controlled by a type of reflex. Called the **vasopressor reflex**, this reflex contracts and dilates vessels in response to emotional states such as anger, embarrassment, and fear. The blush that comes to a person's face or the pallor that accompanies fright are both reflexes to changing conditions inside and outside the body.

FUNCTIONS CONTROLLED BY REFLEXES



Infants exhibit a variety of reflexes, such as the grasping reflex, falling reflex, and sucking reflex. As babies grow, some of these reflexes vanish, and others change.



H. Armstrong Roberts

At first, a child's big toe curves upward when the bottom of his foot is stroked. After six months, however, the big toe curls down. Newborns also swim automatically when placed in water. Their swimming reflex prompts them to hold their breath and to move their arms in a rhythmic swimming motion. After four months, this reflex disappears. The absence of any of these reflexes in a newborn can alert parents to potential neurological problems.



Plantar reflex



Babinski's sign

Because of the plantar reflex, a person's toes move downward when a pointed object is rubbed across the bottom of the foot. If the big toe curls up, it is called *Babinski's sign*.

Perfect love recognizes the changing needs of others.

4 REFLEXES ARE PURPOSEFUL, MAINTAINING BALANCE AND HARMONY BETWEEN MEMBERS.

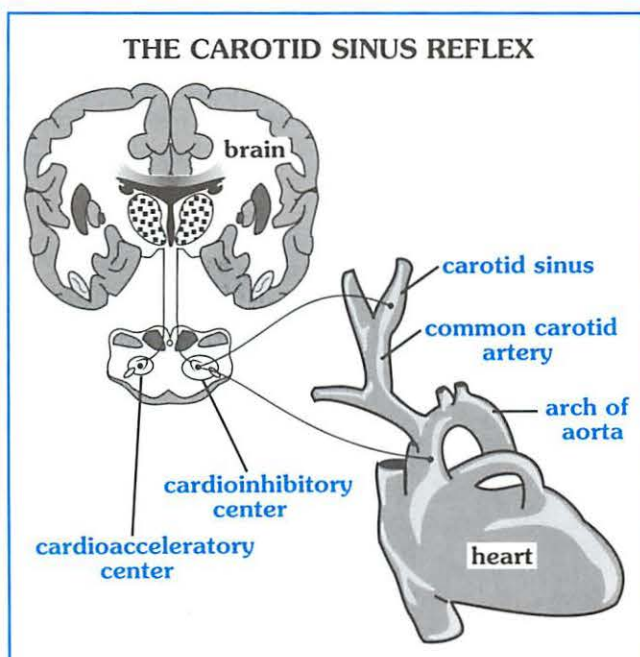
Perhaps the most important purpose of a reflex is to maintain homeostasis. For example, one particular reflex monitors the moisture of the throat. It increases the flow of saliva when conditions are dry and limits the flow under moist conditions. Other similar reflexes use special visceroreceptors to monitor the walls of the stomach and intestines, ensuring that they do not dry out.

Without reflexes to monitor and regulate these and other important conditions, the brain would be so preoccupied with "housekeeping" activities that it could not take time to think. Reflexes free the mind from routine duties and make sure that important details are not overlooked when the mind becomes distracted with other activities.

The **carotid sinus reflex** maintains optimum blood pressure in the brain. Nerves called *pressoreceptors* line the carotid sinus—a small cavity

within the carotid artery in the neck. Changes in blood pressure cause the pressoreceptors to send messages to the brain by way of the glossopharyngeal (glah-so-phuh-RIN-jul) nerve. (The glossopharyngeal nerve is the ninth cranial nerve.)

A reflex located in what doctors call the **cardioinhibitory center** carefully monitors these impulses. It slows heart rate when stimulated and accelerates heartbeat when it relaxes. The net result is an increase in heart rate when blood pressure drops below normal and a decrease in heart rate when blood pressure is too high.



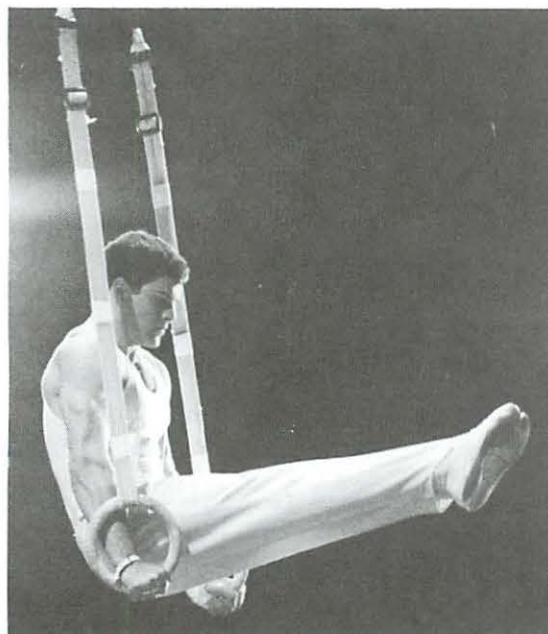
The carotid sinus reflex controls a person's blood pressure when he changes position. For example, standing up causes a sharp drop in blood pressure in the head. If the carotid sinus reflex did not correct the imbalance, a person might faint.

Two other reflexes, the **aortic reflex** and the **atrial reflex**, control blood pressure in other parts of the body. The aortic reflex responds to arterial pressure, while the atrial reflex (also called the *Bainbridge reflex*) monitors venous pressure. Without their vigilance, blood pressure would rise and fall dangerously whenever a person moved.

Another type of reflex utilizes a receptor called the **Golgi tendon organ**. This reflex protects tendons from being ripped away from the bones to which they are attached. Camillo Golgi (1843–1926) was an Italian physician who studied the intricate details of the human body. His discovery of these tiny receptors explained why a strong man rarely tears any muscles when he lifts heavy weights.

The Golgi tendon organ forms microscopic capsules near the point where tendons join muscles. As a muscle pulls on a tendon, it stretches these capsules, causing them to send impulses to the contracting muscle. These impulses weaken the muscle contraction and protect the tendon from tearing. In other words, the harder a muscle contracts, the more the capsule tells the muscle to “back off.”

Each Golgi capsule has a threshold that is matched precisely to the strength of the tendon it serves. For example, powerful tendons contain receptors with high thresholds. They do not begin to fire until there is considerable force applied to the tendon. Weaker tendons contain receptors with lower thresholds. They begin to restrict the force of a muscle under much less stress. This response prevents a muscle from ripping itself loose from its attached tendon or bone.



The Golgi organs in this gymnast's arms help prevent his muscles from injuring themselves.

Still another organ that is embedded in muscle tissue is a specialized muscle fiber called an *intrafusal fiber*. Intrafusal fibers accelerate the rate at which nerves transmit messages. When a muscle is active, reflexes work faster than when a muscle is inactive.

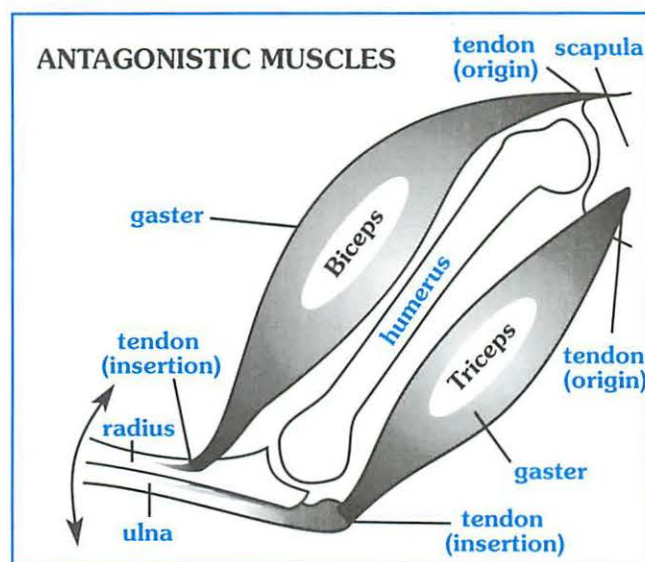
This characteristic promotes more responsive control of muscles when it is most important. It is as if the body gears itself for action automatically whenever the action begins.

Perfect love builds unity and protects against division.

5 REFLEXES ARE INTEGRATED, COORDINATING EVERY ACTION AND REACTION.

Many reflexes coordinate several muscles at the same time. For example, bending your arm at the elbow requires the coordinated movement of two sets of muscles. When the elbow bends, the biceps contract, and the triceps must stretch and relax.

Every movement in the body requires these same coordinated efforts between muscles. Physicians call muscle pairs such as the biceps and triceps *antagonistic muscles*. Every time one contracts, the other must yield.



The biceps and triceps are antagonistic muscles. Motion requires that one antagonistic muscle relax while the other contracts. Physicians call this action *reciprocal innervation*. Contracting both muscles at the same time causes them to bulge without producing any movement.

Many reflexes also require coordination between voluntary and involuntary actions. Voluntary actions are those controlled by the conscious mind. Involuntary actions, on the other hand, are those controlled by reflexes. One such reflex requiring both conscious and reflex control is *micturition*. The term *micturition* comes from the Latin word *micturio*, which means “to desire to make water.” It is commonly known as *urination* or *voiding*.

Micturition involves coordination between reflex control of the urinary bladder's internal sphincter and conscious control of the external sphincter located some distance from the bladder.

The reflex responds to stretch receptors in the bladder. These receptors open the internal sphincter

when the bladder is 40 to 50 percent full. The external sphincter, however, remains closed until the person chooses to open it.



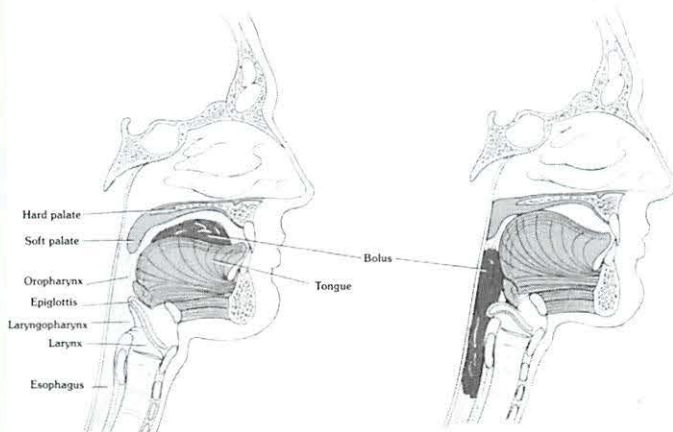
H. Armstrong Roberts

A child wears diapers until he learns to control micturition voluntarily. Until the involuntary reflex and conscious control are coordinated, children continue to have “accidents.”

Another action which requires conscious cooperation with a reflex is swallowing. The technical term for the reflex is *deglutition* (dee-glue-TIH-shun). It comes from the Latin word *deglutire*, meaning “to swallow down.”

Swallowing begins with a conscious decision. The tongue, jaw, and palate work under conscious control to move the food, called the *bolus*, to the back of the mouth. The word *bolus* comes from the Greek term *bolos*, meaning “lump” or “clod.”

DEGLUTITION



**Voluntary
action**

**Involuntary
reflex**

©Leonard Davis

The presence of the bolus in the throat triggers touch receptors which automatically stimulate the reflex act of swallowing. Without the conscious decision to swallow, food does not move into the throat. Without the reflex action which follows, food would not make it to the stomach.

The reflex causes the epiglottis to close the breathing passage and widen the opening to the esophagus. After the bolus passes, the reflex reopens the airway so the person can breathe again.

The opening of the esophagus is controlled by a circular muscle called the *upper esophageal sphincter*. The reflex automatically relaxes this muscle so the bolus can enter the esophagus. As the bolus moves down the esophagus, the reflex coordinates alternate contractions of two types of muscles in the esophagus. Circular muscles contract above the bolus, pushing the bolus downward. At the same time, the reflex relaxes circular muscles below the bolus so the bolus moves along at a rate of about one to two inches per second.

Longitudinal muscles which run lengthwise along the esophagus also contract and relax as the bolus passes, creating a wavelike motion called *peristalsis* (pehr-ih-STALL-sus). *Peristalsis* comes from two Greek parts: *peri*, meaning “around,” and *stalsis*, meaning “a constriction.” During peristalsis, reflexes literally constrict the muscles around an object to move it downward through the esophagus.

Sometimes reflexes are not properly coordinated with voluntary actions. This situation is most likely to occur when someone tries to talk with a mouth full of food. In such a case the reflex action of swallowing may attempt to close the airway at the same time the person attempts to speak, resulting in garbled words. If he tries to speak while swallowing, the bolus may go down the windpipe instead of the esophagus, causing him to choke.

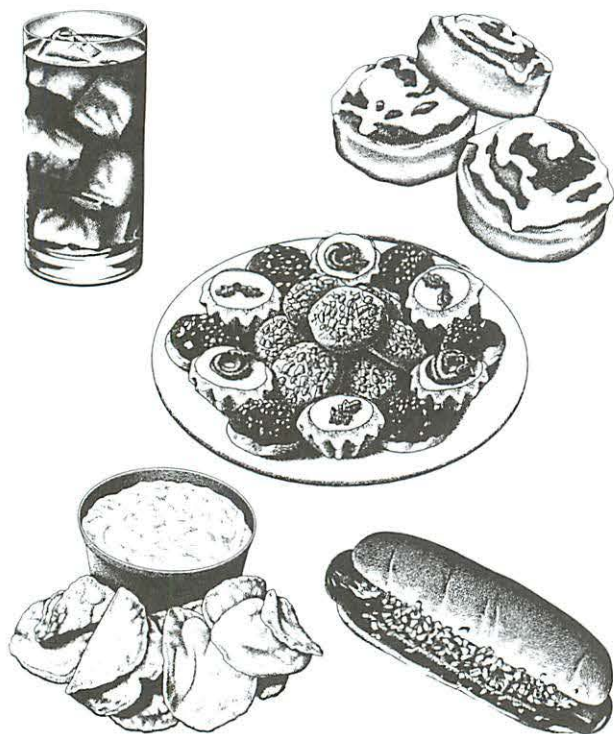
Perfect love is a matter of both choice and confident obedience.

6 REFLEXES ARE CONDITIONED, EASILY BECOMING ASSOCIATED WITH OTHER STIMULI.

Many reflexes are conditioned. They are triggered simply by repeated association. For example, salivary glands produce saliva when taste receptors

on the tongue sense that food is present. However, as a person grows older, the mere sight or smell of food also begins to make his mouth water and his stomach rumble.

Stress and anxiety can stimulate reflexes which dry up a person's mouth by repeated association. Memories can even trigger reflexes which are as real as the experience itself.



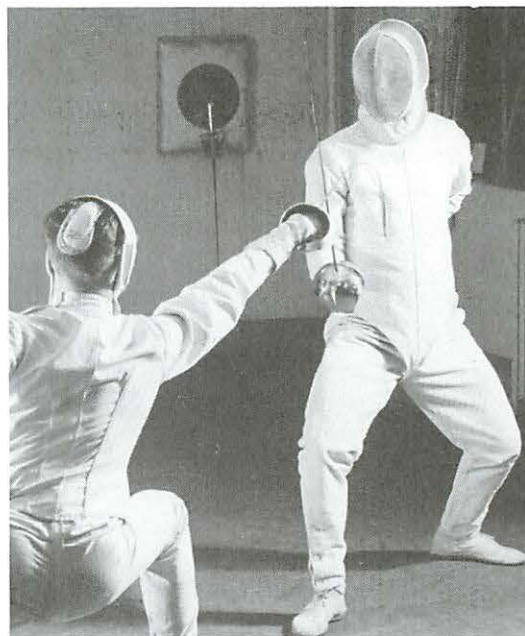
The sight of junk food may excite some people and repel others. Even a mother's call for supper may produce a conditioned reflex. Because it is associated regularly with food, a child's mouth may water at the sound of her voice.

Many things may become reflex actions, if a person practices them long enough. Repeated piano practice, for example, trains nerve pathways which relay sensory messages back to the muscles they control without conscious thought or decision.

Mannerisms, speech patterns, and routine actions may also become reflex habits. Buttoning buttons, brushing teeth, combing hair, putting on clothes, and other complex tasks eventually become reflex habits. One action triggers the next action automatically because of its close association.

Many physical activities require considerable practice before they become reflexes. A violinist who has to think about notes, fingers, bows, and rhythm can play only simple pieces. His brain cannot work fast enough to process all the information. A good violinist responds to each note on the page

"instinctively," because it has been repeatedly associated with the correct action.



Fencing requires "lightning-fast" reflexes which must become conditioned responses.

Perfect love spreads contagiously to others.

7 REFLEXES ARE VULNERABLE, FAILING WHEN HINDERED BY DISEASE OR INJURY.

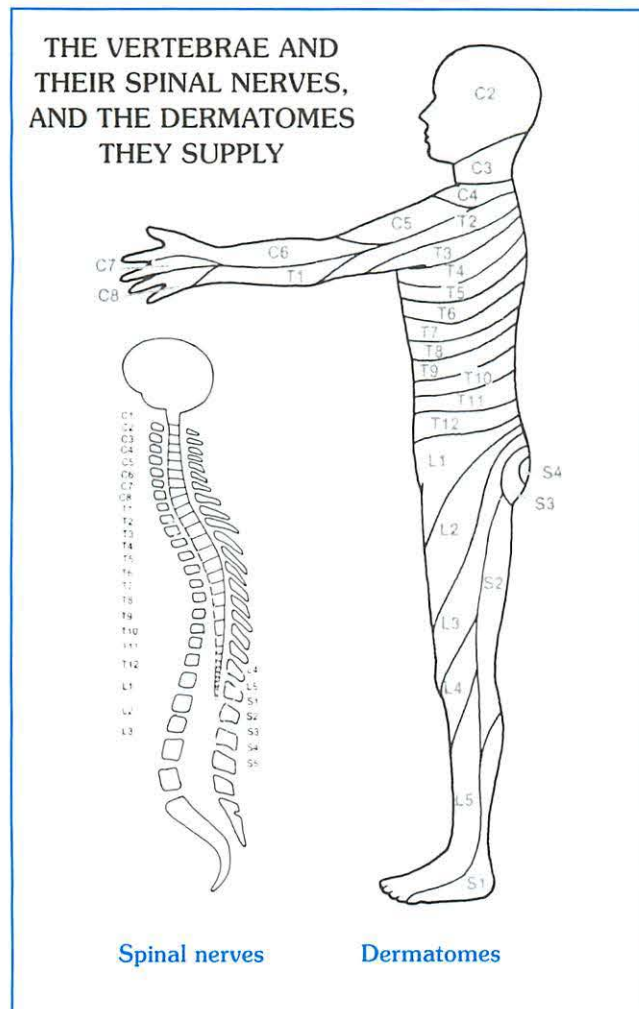
A typical muscle may be connected to as many as 15,000 nerves. Such complex pathways allow information from all parts of the body to flow smoothly from the head to its members and back again. Any interference with the most minute connection, however, can hinder the ability of a muscle to perform its appointed duties.

Snapping the spinal cord above the fourth cervical vertebra disrupts breathing by paralyzing the diaphragm. Thus, execution by hanging produces death by asphyxiation.

All together there are thirty-one pairs of major nerves connected to the spinal cord. These are classified into five groups, depending upon their locations. There are eight pairs of cervical nerves, twelve pairs of thoracic nerves, five pairs of lumbar nerves, five pairs of sacral nerves, and one pair of coccygeal nerves.

These spinal nerves have many functions, one of which is to serve specific patches of skin called dermatomes. A dermatome is simply a small region

of skin served by a single nerve. If the nerve is injured, the affected area is left without any connection to the spinal cord, creating a numbed sensation. Physicians know what nerves are connected to each dermatome and can thus trace the cause of numbness to its corresponding nerve.



Another example of a failed reflex is *achalasia* (ay-kuh-LAY-zuh). *Achalasia* is derived from the Greek words *a*, meaning “without,” and *chalis*, meaning “relaxed.” *Achalasia* occurs when a muscle reflex fails to relax.

Achalasia is usually associated with a failure of the lower esophageal sphincter (also called the *cardiac sphincter*), the circular muscle which closes off the lower end of a person’s esophagus after he swallows. If the sphincter fails to relax, the esophagus does not empty properly into the stomach, and food builds up in the esophagus. Sometimes a meal may stretch the esophagus so much that the resulting chest pain feels like a heart attack.

There are also reflexes which fail to contract certain muscles. The same esophageal sphincter, for example, may fail to close properly. When this

happens, hydrochloric acid from the stomach can back up into the sensitive esophagus. As the acid eats away at the lining of the esophagus, a person experiences the sensation known as *heartburn*.

HOW DO DISEASES AND INJURIES HINDER REFLEX ACTIONS?

- *Polio destroys reflex pathways between the brain and the other members.*

Polio, short for *poliomyelitis*, is caused by a group of closely related viruses which attack motor neurons in the spinal cord and the brain stem. As the disease infects and destroys these nerve cells, the reflexes and muscles they supply become partially paralyzed. Movement, breathing, and swallowing may be greatly impaired. Because the nerves are destroyed, the muscles atrophy, lacking the stimulation and continued use they need.



Robert Williams/Science Photo Library

Computer-drawn lines show how muscles are deformed as the result of polio paralysis.

- *Shingles produces a false impression of pain.*

Shingles is another common infection of the nervous system. It is caused by a herpes virus which is identical to the one which causes chicken pox. This virus may lie dormant for years until suddenly it attacks the skin and its nerve endings.

Shingles is characterized by small blisters on the skin (dermatome) supplied by the infected nerve. The influence of the virus registers a false sense of

pain. Because the virus stimulates the nerves to fire a continuous series of impulses, the relentless pain can be excruciating.



Jim Stevenson/Science Photo Library

Shingles produces small blisters in the area of skin served by the affected nerve. When the fifth cranial nerve is infected, the mouth, nose, ears, and eyes may be affected.

- ***Leprosy numbs a person's members into a false sense of security.***

Leprosy is one of the most common neurological infections, affecting more than fifteen million people in the world today. Most of these cases are in Asia and Africa. Leprosy results from a bacterium which thickens peripheral nerves, causing a person to lose sensation in a limb. Because the infected member loses feeling, it is apt to be injured without the person's even knowing it. The result is infection, gangrene, and marked deformities of the hands, feet, or face.



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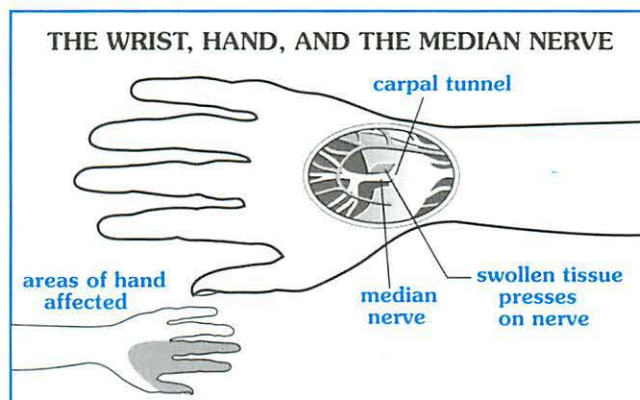
Because a leprosy victim's muscles atrophy, hands often curl up to form useless "claws."

- ***Carpal tunnel syndrome magnifies the consequences of repeated abuse.***

Repetitive movements of the fingers and hands also damage nerves. A condition known as *carpal tunnel syndrome* affects people who perform the same hand action over and over, all day long.

The median nerve, which controls the thumb and first two fingers, passes through a tunnel in the carpal ligament. If the ligament is constantly used, it irritates the median nerve, causing intense pain.

Keeping the arms parallel to the floor relieves pressure, reducing the risk of this syndrome.



The median nerve passes through a tunnel in the transverse carpal ligament. Repetitive hand movements cause the carpal ligament to swell, shrinking the tunnel and irritating the nerve.

Perfect love is thwarted by immorality and greed.

PROJECT

How does perfect love fulfill the Law?

Identify actions and attitudes which are "automatic reflexes" of our sin nature (e.g., anger, jealousy, and bitterness). For each reflex, list the response which would demonstrate genuine love.

Romans 12:21 instructs us to "overcome evil with good." Discuss how a chain of wrong reactions can be broken with a response of genuine love.

Review the Ten Commandments, and list ways that keeping them demonstrates perfect love toward God and others. Choose one Commandment and discuss how each section of this Resource helps to perfect it. Give examples of how God and others have demonstrated perfect love toward you.

Date completed _____ Evaluation _____